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CONTRIBUTIONS TO PRACTICAL MEDICINE.

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CONTRIBUTIONS

TO

PRACTICAL MEDICINE.

BY

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PREFACE TO THE SECOND EDITION.

In five years, since the middle of 1886, a large edition of "Contributions to Practical Medicine" has become exhausted. In the present second edition I have revised and corrected every page of the first, by whatever experience I have been able to gather during twenty-five years of busy practice in treating the sick. I have added two new essays. The first is upon the treatment of gastralgia, and it was published originally in *The Lancet*, in 1887; the second deals with my researches concerning the use of ether as a menstruum in medication by the skin, and includes the substance of my communications upon this subject to *The Lancet*, last year. Throughout this little book I have aimed at utility in medical practice, and I have tried to observe the brevity of detail and expression which seems fitting in a time when there is no end of making books. If there be in these pages many wide gaps and much literary incompleteness, I can only plead the pressure of daily clinical work, and rely upon the generous judgment of my professional brethren.

31, Temple Row,
Birmingham, 1891.

PREFACE TO THE FIRST EDITION.

From such of my medical writings as have been published previously, as clinical lectures, essays, and annotations, in various professional periodicals, during the last eighteen years, I have been induced to select some which I hope may not be thought unworthy of reproduction. These I have rewritten, pruned, and amplified, corrected by my later experience, and collected in this volume.

31, Temple Row,
Birmingham, 1886.

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I.

THE CAUSES AND CURE OF INSOMNIA.*

Psychic, toxic, and senile forms of insomnia.—Condition of brain in sleep.—Emotional shock and mental strain as causes of insomnia.—Symptoms of insomnia.—Causes of toxic insomnia.—Treatment.

I DESIRE to submit to you some practical observations, based upon my own experience as a physician, concerning the etiology and management of insomnia. Inability to sleep at all, or at a suitable time, or long enough, without the aid of drugs, is one of the com-

* A Clinical Lecture: published in *The Lancet*, June 15th and 22nd, 1878; since revised and entirely rewritten.

monest complications and consequences of a vast variety of morbid states. Pyrexia; physical pain, if sufficiently severe, and from whatever cause arising; frequent coughing, as that which often occurs in chronic pulmonary phthisis; urgent dyspnœa, such as results from extreme dilatation of the cardiac cavities, and requires an extraordinary vigilance of the nervous centres for the maintenance of the processes of respiration and circulation—are conditions which prevent, shorten, or interrupt sleep. In such and similar instances the cause of the sleeplessness is obvious. Such insomnia may mostly be controlled by one of two therapeutic methods, or by a combination of them, namely, either by the exhibition of remedies which directly promote sleep (hypnotics), or by the adoption of measures which combat the cause of the insomnia, by reducing the fever, by removing the pain, by soothing the cough, or by relieving the cardiac disturbance. But of sleeplessness

arising as the direct effect of these and like conditions it is not my purpose to speak. I shall endeavour to unravel the complex causes, and point out the successful treatment of that kind of insomnia which may be called, for the sake of simplicity, but scarcely with strict truth, *insomnia per se*, or simple inability to sleep—a kind of wakefulness for which we fail to find an objective or obvious physical cause, and which seems to depend upon an inability on the part of the brain and nervous system generally to adapt themselves to the conditions which are necessary for sleep. We meet with this disorder more in private than in hospital practice—mostly in persons who belong to what are called the upper and upper middle classes, and mostly in individuals of high mental endowment. The malady is of extreme importance, and happily, if its causes be rightly understood and judiciously controlled, there are few affections which are more within the sphere of curative therapeutics.

A close study of cases of the kind of insomnia of which I am speaking reveals striking differences in individual instances of the disorder, in respect both to the causes and the course of the malady. These differences demand careful consideration, because they have important bearings upon both our therapeutics and our prognosis. I have endeavoured to arrange the different varieties of insomnia into groups, in which the cause of the affection is the "principle of division." To these groups I give the names "psychic," "toxic," and "senile."

In natural sleep the brain is relatively anæmic. When the organ is in full activity its arteries are filled with blood; its cells are living rapidly, actively receiving nourishment from the blood, and pouring into it in exchange the waste products of their vitality. But in sound sleep the brain is inactive; at least all but that part of it which is concerned in the processes of organic life. The cells which

think are as still as those of the muscles of a limb which is at rest. The blood flows in a smaller and gentler stream than in the waking state; the cells are not expending energy, but they are leisurely renewing it and storing it up: in a word, they are resting. Any cause which prevents the due repose of a sufficient number of those brain-cells which are concerned in conscious thought will prevent sleep; relative cerebral hyperæmia is a consequence of such activity, and is also a concurrent, though subordinate, cause of wakefulness. Hence there are causes of insomnia which act primarily in sustaining cerebral activity, and with it, and in consequence of it, relative cerebral hyperæmia. Again, any cause which prevents the brain from becoming sufficiently relatively anæmic for sleep will produce insomnia. Any agent which sustains cerebral hyperæmia, or any morbid condition which impairs the contractility of the cerebral arteries, may prevent wholly, or in part, the occurrence

of such a degree and extent of cerebral anæmia as is required for the production of sleep. Hence there are causes of insomnia which act primarily in exciting and sustaining relative cerebral hyperæmia, and with it, and in consequence of it, cerebral activity. But in such a complex condition as conscious cerebral activity, where thought implies increased blood-flow, and increased blood-flow implies thought, we cannot in any given case allow with strict accuracy entire causal precedence to either of the factors which are essential to the common result. But these considerations are strictly pertinent to a clear conception of the causes of insomnia. In some cases of sleeplessness, as in the psychic group, undue and protracted cerebral activity is the primary vice; in others, as in the toxic and senile varieties, relative cerebral hyperæmia is the initial error, and cerebral action its direct consequence.

I shall now consider more in detail the psychic form of insomnia. A severe and

sudden emotional shock of a depressing kind, as grief at the death of a beloved relative, will sometimes produce at once persistent insomnia, which will only yield to carefully directed therapeutic procedures. Prolonged mental strain, in all its varied phases, is a common cause of sleeplessness. Our patient may be a student preparing for an examination. For weeks, in spite of fatigue, he may have shortened his hours for sleep that he might lengthen his time for reading; and he may have been in the habit of keeping himself awake, when he could readily have fallen asleep, by drinking strong tea or coffee or by smoking tobacco. But he could always go to sleep at once when he went to bed, and sleep soundly, until, after some weeks of his abnormal work, with the nearer approach of the examination bringing increased anxiety as to the result of the ordeal, he found he began to sleep badly or could not sleep at all. He grew miserable;

he could not remember what he read; he felt unfit for any exertion; and he could not face his examination. Or, our patient may be a young professional man. He has commenced practice, or rather to wait for practice, as a barrister, a solicitor, a physician, or a surgeon. He begins to find that causes or cases have not been waiting for his advent; clients or patients are "few and far between." For a time he manfully struggles on, his hope and his health sustaining him; but these at last yield under the continued pressure of new disappointments and accumulating anxieties. He wants money; his friends will give it to him readily if he will ask for it, but his pride prevents him. It is not a gift or loan he needs; he does not want to beg or borrow money, he yearns to earn it. And while he has been hoping and waiting, and growing sick with the failure of his expectations, he has been working early and late in his study

perhaps reading for some higher examination, denying himself due sleep and exercise, in the trust that he might thus so skill himself as to secure the longed-for practice. At last he has fairly broken down. He has grown thinner; he looks haggard; he is filled with groundless fears; he is weighed down with the ineffable misery of insomnia; he has constant headache and noises in his ears; he thinks his memory is failing; he is dull and listless; he has been lying awake for hours after going to bed, or, waking in the "small hours," he has been unable to sleep again, and when he has slept he has had horrid dreams; and he comes to us for help because he can scarcely sleep at all, and he is possessed by the fear that he is going mad. In these cases acute or continued mental strain is the primary cause of the sleeplessness. Where the shock has been sudden and severe it has been sufficient to rouse a given group of cells into persistent activity. Where the

strain has been less intense, but kept up long, it has been all the more hurtful because the same set of ideas has been maintained in exhausting recurrence ; and because, as a consequence of this monotony, the same part of the brain has been continuously upon the rack. But in either case sleeplessness did not occur until there arose from exhaustion partial or complete vaso-motor paralysis of the intra-cranial blood-vessels ; until the arteries of the brain, worn out by a sustained erethism, could no longer, even when the brain most needed it, find the force for that contraction of their calibre without which sleep is impossible.

The subjects of the psychic form of insomnia are mostly men, and mostly men of the nervous temperament. We have lately been too ready to ignore temperaments ; our fathers studied them better and regarded them more than we do. But I shall not go to any authority for a portrait of the nervous tem-

perament; I shall describe it as I think I have found it. I use the phrase nervous temperament to indicate a distinct type of outward form, of manner, of habits, and of tendencies. Temperaments present their various types most frequently in men. Comparatively few women exhibit a well-marked temperament; but when a woman is of the nervous temperament, in her the temperament is mostly very distinct indeed. Two or more of the different kinds of temperament may appear to be blended; we have a compound of modified temperaments. A man of distinctly nervous temperament has a quick manner; he is nearly always in a hurry; he is apt to talk volubly and eat quickly; if he does not know us well, he fidgets with his hands or legs when he is speaking; he talks abruptly, earnestly, and fluently, often splitting up his phrases, or recalling and correcting them, and especially modifying qualifying words, such as adverbs and adjectives, in his

anxious desire to express what he conceives to be the finest shades of truth. A man of this temperament is apt to "overdo" everything into which his feelings enter. He is apt for hobbies; and he is often a diligent collector of curiosities. When he becomes a patient he is harassed about some trivial symptom; he has felt his heart beating, and he thereupon fancies he has some deadly cardiac disease; he thinks his memory is failing, and he forthwith imagines he is going mad.

A man who has suffered much from insomnia becomes the subject of a well-marked group of symptoms. Most of them are given by certain writers amongst the signs of cerebral hyperæmia. It is probable that they mark a particular variety of exhaustion of the brain, attended by more or less abnormal increase of intra-cranial vascularity, and accompanied by some general prostration of the bodily powers. Here are the concomi-

tants of insomnia as I have found them. The patient has a dull and listless look ; his eyes are wanting in vivacity ; the upper lids may droop a little, and they may be slightly swollen. The complexion is sallow. There is headache ; of this there are two kinds, which either co-exist or occur separately. The commoner variety of headache is a dull pain felt over the whole of the vertex, together with a vague and widespread feeling of oppression in the head ; the other is a sharp, shooting pain, which comes on suddenly, and usually in single flashes, and which gives the idea of a knife being driven through the head from one temple to the other. Occasionally the patient feels a momentary giddiness ; this may cause a false step, but it never lasts long enough to give rise to staggering. The skin of the head, especially near the saggital suture, may be tender. There are noises in the ears, in one or in both, usually of a low-pitched whistling character. They may come on sud-

denly, and without apparent cause, as when the patient is talking quietly, or they may only come on when the attention is more closely occupied, as in writing a letter or casting up figures. A striking sign is a slight impairment of hearing. The patient may be unaware of it, but those with whom he lives have noticed that he often asks them to repeat what they say to him because he could not quite catch their words. He may complain of seeing spots before his eyes — little cob-webby black lines, which come and go and float about, or bright, bluish, phosphorescent-like specks which seem fixed for a moment, one before each eye, and which only appear when he first directs his eyes towards an object. There are some abnormal sensations in the skin; not formication, such as is apt to arise in organic nervous disease, but a sharp, transitory, and isolated prickling, as of the movement of a single pin, which lasts only for an instant, and affects either the

limbs or the trunk, mostly the former. There may be a peculiar twitching of muscles. It is not a vibratory tremor, like that of progressive muscular atrophy, nor is it a contraction of a whole muscle, or of a group of muscles, such as arises in true convulsion. But, while the patient is sitting still, a considerable part of a muscle becomes the subject of rapid clonic movements, and these are wholly independent of volition. These movements mostly occur in the lower extremities, but they are rarely sufficient to move the limbs; they usually affect the lower part of one vastus internus, and last for about a minute. The patient can feel the movements by attending to the affected part, and he can also feel that the muscle moves by applying his hand to it. In such a case there is often unnatural and painful sensitiveness to external impressions. The patient craves for quiet. A bright light troubles him. Noises, the sight of moving objects, touches, as of the hand

of a friend upon his shoulder, annoy him. There is not an increased sensitiveness to external impressions, but impressions which are enjoyed or unnoticed in health become irritants.

I have been considering a kind of insomnia in which unnatural excitation of the cerebral cells is probably the initial fault. In a very few words I shall indicate the other forms of the disorder—the toxic and the senile.

In toxic insomnia, the cause of the sleeplessness acts primarily upon the vessels of the brain, giving rise to some degree of arterial hyperæmia. Some poisonous agent maintains cerebral vascularity at such a height that conscious cerebral activity—that is, wakefulness—is an inevitable consequence. Such a poison may be introduced into the body from without, or it may be a product of diseased processes arising within the body itself. Of course, I use the word "poison"

in a restricted sense; I do not mean something which kills, but only something which produces abnormal manifestations in the living body. The external poisons which most frequently cause sleeplessness are tobacco, alcohol, tea, and coffee; the internal, certain waste products of tissue-metamorphosis which accumulate in the bodies of gouty persons, or of those whose kidneys act deficiently. Many a man does not and cannot sleep sufficiently simply because he smokes excessively. Cut off his "cavendish" or his cigars, and he will sleep well. Many smokers know that they sleep badly if they smoke more than their usual quantity of tobacco, or if they smoke tobacco stronger than that to which they are accustomed. If a man who smokes two cigars every evening be induced at some time to smoke three, or if a smoker of "bird's-eye" venture to replace it by "cavendish," he may, when he has gone to bed, find he cannot sleep; and the cause of his sleep-

lessness is the smoking of more or of stronger tobacco than that to which he has been accustomed. Men of distinctly nervous temperament, or men in whose temperament there is a distinct and considerable admixture of the nervous element, are often great smokers. Men who are slow and calculating are rarely smokers; men whose activity is of an objective type are happy in rarely feeling the nervous unrest which tobacco calms. Tobacco smoking stimulates the cerebral circulation; it disposes to a succession of pleasing ideas by inducing an easy flow of mental activity. But this stimulation of the blood-flow in the brain is sure, if pushed to undue limits, to induce cerebral vaso-motor debility or paralysis, and, as a consequence, persistent conscious thought. Sometimes, then, a man consults us for the relief of insomnia, and we find he is young, he has had no trouble, he takes plenty of food and exercise, and he does not overtax his brain. But he is

an excessive smoker ; he smokes morning, noon, and night, and he has gone on from mild tobacco to the strongest. He need not give up, nor shorten, nor change his work, and he does not need drugs ; cut off or cut down his smoking, and he at once sleeps well. And so, *mutatis mutandis*, does alcohol cause sleeplessness. The man who drinks to commencing drunkenness mostly sleeps soundly, if not well. But many a so-called moderate drinker knows that he sleeps badly if he take a little more than his usual quantity of wine after dinner, or even his usual quantity of some unusual wine. Alcohol flushes and dilates the smaller blood-vessels, especially those of the brain ; if such a condition be maintained, sleep is disturbed or wanting. We have all seen the insomnia of delirium tremens : the patient cannot sleep because the lesser arteries of his brain are paralysed by alcohol, and sleepless cerebral activity is the inevitable consequence. Far short of what is usually called alcoholism, we often meet with

cases of insomnia in which alcohol alone is the cause of the wakefulness. The patient may pride himself upon his moderate use of fermented stimulants, and he may be wholly ignorant of the cause of the sleeplessness for which he consults us. We fail to find any sufficient psychic cause for his insomnia; but if we take away or diminish his wine or his grog, or induce him to consume it before the evening, we find he soon begins to sleep well.

The effects of tea and coffee in causing wakefulness are well known. Some individuals are extremely susceptible to the action of these stimulants. We sometimes meet with persons, mostly women, who habitually drink enormous quantities of strong tea; such people are usually troubled with flatulent dyspepsia, and sleep badly, but they rarely suffer from serious insomnia.

On this occasion I can only mention those varieties of toxic insomnia which are apt to occur in gouty persons, or in those whose

kidneys are failing, and which arise from the accumulation in the blood, in consequence of deficient excretion, of the products of tissue-metamorphosis. Insomnia of this kind is rarely complete. But the patient may complain that he sleeps very badly, that he lies awake for some hours and has great difficulty in getting off to sleep, that he is easily awakened and wakes frequently, and that he always dreams when he sleeps. In such a case we may find a pulse of high tension; the aortic second sound may be accentuated, and the first sound of the heart may be reduplicated at the apex. Where there is chronic renal disease there may be the physical signs of the characteristic cardiac hypertrophy which accompanies chronic contracting nephritis. Insomnia in such cases is due, probably, to the maintenance of a state of high tension in the cerebral arteries. I wish to impress upon you that we find a clue to the cause of many cases of sleeplessness in the signs of the gouty diathesis or in the discovery of albuminuria.

Again, there is a senile form of insomnia. You may perhaps have observed amongst your friends that an exaggerated appreciation of the merits and value of early rising mostly increases as age advances. The sleeplessness from which many old persons suffer is mainly, if not entirely, the result of senile degeneration of the smaller cerebral arteries. Those vessels are less elastic and less contractile than in health, and their weakened walls often lead to their permanent dilatation; they are physically unable to adapt themselves fully to the condition of relative arterial anæmia which is requisite for healthy sleep. The tendency of this condition of the blood-vessels of the brain to prevent or lessen sleep is probably to a great extent counteracted by the cardiac feebleness which so frequently and so fortunately coexists with the vascular changes.

In the treatment of insomnia we must often use soporifics. Of these the chief are chloral, opium, morphia, sulphonal, the

bromides, Indian hemp, alcohol, and affusion with cold water. The successful treatment of a case of sleeplessness follows from the discovery of its cause. In the severer forms of psychic insomnia we must often at once secure sleep by some efficient hypnotic. I prefer opium or chloral. By the use alone of one of these drugs we can often quickly cure acute insomnia depending upon some sudden mental shock or strain. A few nights of sound and sufficient sleep, artificially induced, will do more than anything else to restore to the brain the power of sleeping without aid from drugs. In the more chronic forms of psychic insomnia, where the sleeplessness or wakefulness usually depends upon prolonged worry or overwork, I employ chloral sparingly. It should only be used as a temporary remedy, when it is necessary that we should at once secure a fair amount of sleep. The patient ought never to be allowed to swallow this dangerous but valu-

able drug whenever he feels so disposed, or to apportion its dose for himself; he ought only to take it under medical direction and observation. Another important point must always be kept in view. It is this: an overworked man must never be permitted to go on with his overwork, and habitually secure sleep by chloral or any other hypnotic. In such a case we must always aim at preventing the sleeplessness by removing its cause, instead of pursuing the easier but illogical and precarious course of permitting that cause to continue, and of trusting to counteract or suppress one of its effects by medicine. When a man cannot sleep because he works his brain too much, we must insist that he stop or greatly lessen his labour. But I must warn you that real work is not often the cause of insomnia. Work fits for rest. It is mostly worry, not work, that brings unrest. It is not work that wears, but worry. Whatever the cause of the insomnia, a holiday,

with complete change of scene, will often do much to effect a cure. The old maxim, "*Cælum non animum mutant qui trans mare currunt*," like most other maxims, old and new, is not always wholly true. Send an overworked and worried merchant or barrister from his counting-house or from his chambers, in a busy town, to a quiet village by the sea, or across the Channel, to a French watering-place, and let him substitute walking and bathing, rowing and fishing, for his books or his briefs, and he will often need no physic to make him sleep soundly and sufficiently. But, however great the influence of new surroundings and of new outlets for energy, for the cure of many cases of psychic insomnia we cannot dispense with drugs. In well-nourished patients, and in the slighter cases, bromide of potassium is by far the best hypnotic. It soothes the irritated and irritable cerebral cells ; it is a direct and absolutely safe brain

sedative. It is marvellously powerful in producing nervous calm; but it must be given in full doses, thirty to sixty grains at bedtime. It is well to conjoin with it some drug which will favour the contraction of the weakened cerebral vessels. For this purpose we may give tincture of ergot or tincture of digitalis, one or both. In many cases of chronic wakefulness, arising from mental strain, the patient is distinctly anæmic. Unless the anæmia be remedied, the insomnia cannot be cured. The patient's pale face and soft, small pulse declare the condition of his blood. Such a person mostly feels drowsy when he is up, and wakeful when he lies down. Of course he needs iron. We may give him a grain or two of reduced iron, sprinkled on a small piece of bread, or a wineglassful of Orezza water, after each meal. His diet must be liberal, containing plenty of fish, meat, and eggs. For such a patient alcohol is often the best hypnotic.

To many people a "nightcap" of toddy is a superfluous, perhaps hurtful, luxury. But it gives, perhaps better than anything else, rest and sleep to the exsanguine and worried brain. We must never be blind to the responsibility we incur when we prescribe alcohol, neither need we exaggerate that responsibility. When we use alcohol, in the form of any of the fluids which contain it, as a remedy in the treatment of disease, we must clearly state the reasons for its adoption; and we must discontinue it, as we discontinue the use of other drugs, when the conditions which called for its exhibition have disappeared. If I am sure of anything in therapeutics, I am sure that alcohol is the best hypnotic in many cases of chronic psychic insomnia, when the patient is worried, sorrowful, weakly, and anæmic.

Many comparatively minor points are especially worthy of attention in the treatment of chronic psychic insomnia. In most

awake will often fall asleep at once after getting out of bed and sousing his head, neck, and hands in cold water, or after following Charles Dickens' plan of standing at his bed side until he feels chilly, and thereupon turning over, shaking up, and cooling his pillows and the bed-clothes, and then getting into bed.

Especially must we endeavour, in the toxic kinds of insomnia, to act upon the maxim, "*cessante causâ, cessat et effectus.*" We must stop or lessen the consumption of tobacco, alcohol, tea, &c., as the case may be. A discussion of the treatment of gouty insomnia, and of the sleeplessness arising in some chronic kidney diseases, would involve a consideration of the whole question of therapeutics of the maladies upon which these forms of wakefulness depend. I shall only now say that in gouty lithiasis, with a pulse of high tension, I have confidence in the curative powers of colchicum, supplemented

by the exhibition of dilute saline purgatives, such as Pullna, Friedrichshall, Hunyadi Janos, Æsculap, and Rakoczy waters. Senile insomnia is very obstinate; perhaps in the bromides, with full doses of hop or henbane, we have the most efficient and least harmful means for its relief.

To treat insomnia with precision, we must in each case find its cause, and remove such cause when we can, or subject it to favourable modification. Each case needs close individual study. We may find a man lies awake in the earlier part of the night because he works with his head too late; or we may find insomnia after a brief "first sleep," the patient being unable to sleep during the remainder of the night because his brain is kept on the alert by worry in his affairs, and especially by financial anxiety. We must always remember that sleeping is a rhythmical function, and we must not allow our patients to sleep on too late in the

mornings because they have been unable to sleep at the proper time. In some cases the good effects of a little food, a cup of cocoa, or a small piece of dry bread, upon getting into bed, or upon awakening after a slumber which is too short for a night's rest, are most happy.

II.

PHTHISICAL LARYNGITIS.*

Definition of the disease.—Value of the laryngoscope.—Concurrence of phthisical laryngitis and pulmonary consumption.—Stages of phthisical laryngitis.—Vocal symptoms.—Respiratory symptoms.—Difficulty of deglutition.—Cough.—Pain.—Expectoration.

I PURPOSE to offer you a brief description of phthisical laryngitis. I shall endeavour to lay before you in outline, in as few words as possible, an account of the clinical history and progress of this common, painful, fatal,

* A Clinical Lecture: published in *The Lancet*, January 30th, 1875; since revised and entirely rewritten.

and important malady. By phthisical laryngitis, I mean that peculiar form of chronic inflammation of the structures of the larynx which is met with in a very large proportion of cases of ordinary chronic pulmonary consumption. From the earliest times this disorder has been recognised. Celsus indicated it, probably, when he described, as a result of exposure to bad weather, " Tussis, destillatio, raucitas, in quibusdam etiam tabes oritur." The general symptoms of serious laryngeal disease are always strikingly evident, even without the aid of the laryngoscope; and when these were present in cases of consumption of the lungs, it was usual to infer that laryngeal phthisis existed as a complication. After death, decided evidences of grave laryngeal lesions were often found, more especially ulcerations of the mucous membrane and changes in the cartilages—conditions which have been carefully described by Rokitansky

and other writers. But the laryngoscope, as has often been said, literally threw light upon these and many other pathological processes in the throat. We have now become able exactly to observe, and carefully to watch, and so intelligently to treat, these local maladies; and it has become possible to mark the earliest visible alterations of the larynx in laryngeal phthisis, to recognise the disease in its first beginnings, to divide its progress into stages, and to apply remedies directly to the morbid tissues. Mackenzie, Niemeyer, Marcet, Cohen, Gibb, Aitken, Lennox Browne, and many others have written excellent descriptions of laryngeal phthisis—descriptions which agree in the main, while they conflict in not a few important particulars. But I shall follow the writings of none of these authors; I prefer to base my brief account of the course of the disease upon my own clinical experience in private and hospital practice.

Concerning the pathology of phthisical laryngitis I shall say little. Our ideas of the pathology of phthisis have recently undergone some important changes. Amid much contradiction, but as the fruit of much patient labour, very great advances—advances to my mind unsurpassed in importance by any which have been made in this generation in any department of the science of medicine—have been gained in our knowledge of phthisis and tuberculosis. Pathologists and physicians who have written about laryngeal phthisis have differed much in their views concerning the nature of the affection. For example, "Virchow recommends the larynx as the very place to study true tuberculosis;" * while Louis did not consider that tubercle was ever deposited in the tissues of the larynx; † and Mackenzie, describing the pathology of

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* Niemeyer: Pract. Med., translated by Humphreys and Hackley.

† Louis on Phthisis, quoted in Reynolds' System of Medicine.

laryngeal phthisis, says, "Tubercle appears to play a very secondary part, if any part at all." * My own observations lead me to conclude that the local lesions in the larynx in phthisis are inflammatory, and unconnected with truly tubercular processes. But we must recognise that the local changes in phthisical laryngitis have a characteristic course of their own; the local inflammation, in its progress and results, is distinctly of a specific type. Phthisical laryngitis is a peculiar form of chronic inflammation of the larynx.

I do not think I have ever met with a case of laryngeal phthisis which was not complicated, sooner or later, with pulmonary consumption. The pulmonary changes usually appear before those in the throat. But not unfrequently laryngeal phthisis becomes fully established before any lesions in the lungs can be appreciated, and in these cases the

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* Mackenzie: Reynolds' System of Medicine.

laryngoscope is of the greatest service in helping us to decide whether a given case of laryngitis, unattended by thoracic disease, is phthisical or not. Adults are much more liable to this disease than children, and men than women.

For some time past I have found it convenient to divide the laryngeal changes in this affection into four stages, viz., 1, the stage of anæmia; 2, that of tumefaction; 3, that of ulceration; and, 4, that in which necrosis or caries of the cartilages may arise. The first three of these stages are almost always met with; the last is not nearly so constant in its occurrence. The earliest visible local change is anæmia—a very decided and general pallor of the mucous membrane of the larynx. Any one accustomed to use the laryngoscope cannot fail at once to recognise this condition. Sometimes the anæmia extends to the whole of the upper part of the throat, to the fauces, the soft

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palate, and the roof of the mouth; but it never goes beyond these limits; it is always local; in its localisation is its phthisical significance. When the signs of anæmia are general, this local bloodlessness loses its phthisical import; but when we find vocal feebleness and laryngeal anæmia in a person who is not anæmic, in the ordinary sense of that term, we must search for other evidences of phthisis, and closely watch and strive to improve the nutrition of the larynx. As the local disease progresses, the laryngeal mucous membrane becomes hyperæmic; the cords lose the clear, white lustre of health. For a time it may be very difficult or quite impossible to distinguish the case from one of simple chronic laryngitis. But sooner or later the characteristic tumefaction of laryngeal phthisis appears, and there remains no further room for doubting the serious nature of the local malady. The swelling is usually most marked in the ary-epiglottic folds. In extreme

cases these folds are often expanded into two large, tense, brawny-looking, pear-shaped tumours, with their larger ends meeting together in the middle line behind, while their smaller extremities are directed upwards and outwards towards the epiglottis. The epiglottis is similarly changed; it loses its leaf-like form, its edges become thick and rounded, and the whole organ presents the appearance of an irregularly globular tumour. Sometimes the epiglottis is more or less twisted and drawn to one side, and the swelling of the ary-epiglottic folds may be unilateral at first. These tumefied tissues seriously encroach upon the opening of the glottis, and they often completely hide the vocal cords from view. Even now the laryngeal mucous membrane looks paler than in health, although irregular patches of congestion and enlarged and tortuous vessels may frequently be observed. When the appearances of this stage of laryngeal phthisis

have become established, the case is sure to terminate fatally. Sooner or later, if the patient do not die from disease in other organs, the swollen laryngeal tissues become ulcerated. The ulcers are irregular in shape and distribution ; there are usually more than one of them, they may occur in any part of the larynx, they tend to spread and run together, and their surfaces are always covered with a mixture of pus and mucus. The ulceration frequently implicates the vocal cords, usually at the junction of their middle and posterior two-thirds. Caries or necrosis of some of the cartilages, proceeding probably from perichondritis, is the last local lesion in laryngeal phthisis, but this stage is rarely reached.

Let us regard the effects of these changes upon the voice, upon breathing, and upon swallowing. In all cases the voice is affected early ; in nearly all it is sooner or later wholly extinguished. At first the vocal impairment

may be slight; the voice appears weak and tends to become whispering. Failure of the voice in reading aloud may first be noticed; those who sing find it difficult or impossible to produce their higher notes. When congestion appears, the voice becomes husky, harsh, and hoarse. When there is much submucous tumefaction, the movements of the cords, and especially their approximation, are mechanically interfered with, and the voice is consequently still further impaired; when the tumefaction is considerable, and when it passes into widespread ulceration, all truly laryngeal voice is usually lost.

There is, as a rule, no embarrassment of respiration at first. But when the second stage of the malady is decidedly established, the passage of air through the narrowed glottis becomes more and more difficult; there is often loud stridor, which in some cases is subject to alarming paroxysmal exacerbations, and in a few instances the

laryngeal dyspnœa is so great that tracheotomy may be necessary to avert impending suffocation.

In most cases of laryngeal phthisis deglutition is at some time interfered with; in many instances dysphagia becomes the most prominent and most dangerous of all symptoms. In many cases of laryngeal phthisis the symptoms of organic stricture of the œsophagus may be closely simulated. There is never any difficulty in deglutition until the disease has at least reached its second stage. When the ary-epiglottic folds are largely swollen, they project backwards over the upper opening of the œsophagus, and offer a mechanical obstruction to the passage of food. In this stage, too, the swollen parts cannot be perfectly approximated so as to occlude the glottis and prevent the entrance of portions of food into the larynx during swallowing; almost whenever swallowing is attempted a violent fit of coughing is induced,

during which fluid food may be ejected through the nostrils. Apart from these serious difficulties, deglutition always, sooner or later, becomes acutely painful. Pain arises in part from the mere pressure of passing food upon the tumid and tender laryngeal structures, but it is also due to the movements of the diseased tissues which the act of swallowing requires.

When the morbid parts are at rest, in many cases there is little local pain. There is nearly always a little unpleasant tickling in the throat as an early symptom. Patients feel as if there were something sticking in the windpipe—as a fly—and causing irritation, which they are prompted to try to remove by violent hawking and coughing. When the stage of ulceration is reached, severe burning pain in the throat is sometimes felt, which is propagated in various directions, but especially towards the ears.

A considerable quantity of phlegm may

be derived from the larynx in phthisical laryngitis. In the earlier stages of the disease, nothing but a little glairy mucus may be coughed up ; when there is much congestion, a few streaks of blood occasionally appear ; when there is ulceration, the sputa gradually become chiefly purulent, and the admixture of blood is more copious and more frequent.

III.

THE TREATMENT OF PHTHISICAL LARYNGITIS.*

General treatment.— Counter-irritation.— Laryngeal brushings.— Inhalations.— Lozenges.— Rest.

ALTHOUGH we cannot hope to cure laryngeal phthisis when it has become fairly established, that is when it has reached its second stage, we are able, nevertheless, to do a great deal of good in retarding the progress of the disease and in relieving its pains. By the second stage I mean the stage of laryngeal tumefaction, when the characteristic local swelling appears, replacing the previous

* A paper published in *The Birmingham Medical Review*, 1883, Vol. I.; since revised and entirely rewritten.

anæmia, and leaving no further room for doubting the serious and fatal nature of the laryngeal affection. In all cases of phthisical laryngitis, and in all cases of chronic laryngitis in which suspicious phthisical symptoms are presented, we ought to carry out, systematically and perseveringly, all the general medicinal and hygienic measures which are beneficial in the therapeusis of consumption. I do not regard laryngeal phthisis as a local disease, any more than I look upon cancer as a local disease; it is a local expression of a general constitutional condition, albeit often determined by local causes. To this pathological doctrine I can add, from a fairly extensive experience, that I have never seen a well-marked case of laryngeal phthisis which was not complicated by distinct physical evidences of chronic consumption of the lungs. It is my present purpose only to direct attention to the special local treatment with which more general

measures may be supplemented in the management of a case of phthisical laryngitis.

Counter-irritation, in various forms and of various intensity; the application of remedies to the diseased parts by means of a laryngeal brush; inhalations, whether atomised, steam, or fuming; insufflations; and the local administration of medicines in the form of lozenge, are therapeutic methods which may be used in turn or in several combinations, to suit different practical indications. Counter-irritation over the front of the neck is likely to be of service at any time; it is especially useful when the larynx is congested or painful. We may use iodine or croton liniments, antimonial ointment, or mustard poultices or "leaves." If the colour of iodine be objectionable, a useful liniment may be made by adding to a strong alcoholic solution of iodine enough liquor potassæ to discharge its colour. A

small fly-blister, placed just above the sternal notch, is sometimes of marked service. Stimulating and oleaginous liniments, well rubbed over the front of the neck, are useful; their employment seems to favour the expulsion of mucous accumulations from the diseased surfaces. The following are good liniments, which I prescribe frequently as rubefacients:—

1.

R. Olei Pini Sylvestris,
Liquoris Ammoniæ,
Ætheris,
Olei Eucalypti, singulorum ʒss.
Misce, fiat linimentum.

2.

R. Olei Terebinthinæ,
Olei Gynocardiæ,
Tincturæ Capsici Æthereæ,*
Liquoris Ammoniæ, singulorum ʒss.
Misce, fiat linimentum.

* See paper on ethereal tinctures, in this book.

3.

R. Acidi Acetici,
Olei Terebinthinæ,
Ætheris,
Olei Succini, singulorum ℥ss.
Misce, fiat linimentum.

Warm linseed or bread poultices, or pads of absorbent cotton wool, which wool is now sold variously medicated, wrung out of hot water, and covered with oiled silk, are soothing and grateful when laid over the front of the throat. My experience has led me to place considerable reliance on the efficacy of the application, by means of a suitable brush, of various solutions to the laryngeal mucous membrane. The brush must not be blindly plunged over the base of the tongue; it must be gently and accurately guided to the tumid and tender parts by the aid of a good light and a laryngeal mirror. Solutions of chloride of zinc, of sulphate of copper, or of nitrate of silver, of the strength of ten

to twenty grains to an ounce of water, may be used. The solution of chloride of zinc has a stimulant, and that of sulphate of copper an astringent local action, while nitrate of silver combines these two effects. Local stimulants are especially indicated in the first stage of laryngeal phthisis, when we have to remedy the characteristic phthisical anæmia of the laryngeal mucous membrane. Astringents may be employed in the later stages, when there is swelling or ulceration. When deglutition is difficult, as it always is, sooner or later, in the progress of the affection, when the movement of the swollen parts is obstructed and painful, when the tense ary-epiglottic folds project backwards over the upper opening of the œsophagus, and when the aperture of the glottis cannot be properly protected during swallowing, prompt, though temporary, relief may be obtained by freely brushing the larynx with a strong solution of nitrate of silver, of the

strength of one drachm to an ounce of distilled water. The application must be repeated every second or third day. We may also use many medicines as inhalations. These may be exhibited in various ways; for instance, as simple steam inhalations or as atomised inhalations, and in this latter class the spray may be produced either by steam, as in Siegle's apparatus, or by air driven by bellows, as in the well-known hand-ball spray-producers. As a general rule, moist and warm inhalations are best when we seek to soothe irritation, cold spray inhalations when we desire an astringent or a stimulating effect, or both, while fuming inhalations are more suitable when we desire a stimulating and expulsive result, as in the removal of local collections of phlegm. The vapor coniæ of the British Pharmacopœia is a good sedative. In the slighter cases, I often use with advantage the following spray inhalation :—

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R. Aluminis, gr. 30.
Sodii Biboratis, gr. 30.
Tr. Catechu, ʒiv.
Aq. Rosæ ad ʒiv.
Misce, fiat solutio.

I can recommend the use of medicated lozenges in laryngeal phthisis, especially of some of those of the London Throat Hospital. Theoretically, or rather *a priori*, the local action of lozenges on the larynx may be doubted, but, if we would do our best as practitioners in our day and generation, we must accept empirical facts in therapeutics, and acquire the habit of not valuing remedies the less because we can neither explain nor understand their effects. I am sure good can be done by lozenges in laryngeal affections. In the earliest stages of laryngeal phthisis the trochiscus acidi benzoici, an excellent "voice lozenge," is useful. Later, more emollient and sedative prepara-

tions must be employed, such as the lozenges of marsh-mallow, opium, morphia, or codeia.

Whether we use paints, sprays, powders, or lozenges, there comes a time in the progress of laryngeal phthisis when coughing is not only an urgent symptom to be treated, but also a condition to be arrested as destructive in its local tendencies, and as the prelude of vomiting, which may become so frequent as to break down rapidly the patient's remaining strength. Any measure or remedy, pharmacopœial or domestic, which can keep down coughing affords much relief and often substantial benefit in laryngeal consumption. Prompted by the feeling of local irritation, patients are prone to make energetic efforts at clearing the throat. Such efforts ought to be avoided as much as possible. It is astonishing how much the act of coughing can be brought under the control of the will by an intelligent and resolute person. We ought to impress upon

our patients the importance of restraining and refraining from coughing so far as they are able to do so. While hawking and coughing may give a brief relief by removing accumulating secretions, such actions tend to perpetuate and increase laryngeal inflammatory changes. Here, as everywhere, rest is a prime factor in the control of inflammation. We ought to rest the larynx as much as possible. In the management of laryngeal phthisis keep steadily in view the fact that the malady is a chronic local and specific inflammation. With this idea as the basis of therapeutic indications, you will have two associated lines of treatment, directing your remedies to the relief of local irritation, and to the reform of the constitutional vice of which the laryngeal lesion is a specific expression.

IV.

NOTE UPON THE MEDICINAL TREATMENT OF PULMONARY CONSUMPTION, WITH ESPECIAL REFERENCE TO THE VALUE OF CHLORIDE OF CALCIUM.*

Phthisis a generic name.— Various remedies required.—Value of chloride of calcium as a general remedy in phthisis.—Its old repute in struma.—Value in night-sweats.

HAVE we a remedy for pulmonary consumption? I use the term pulmonary consumption in a generic sense, as including a variety of cognate pathological conditions, marked by

* Abstract of a paper read before the Birmingham and Midland Counties Branch of the British Medical Association: published in *The British Medical Journal*, June 5th, 1880; since revised and entirely rewritten.

certain common consequences and signs. We know that the term chronic pulmonary phthisis includes a variety of pathological conditions and a variety of textural lesions in the lungs, which have long been recognised as distinct, which recent research has done much to unravel, and about which we may confidently expect to learn more. The differing, if cognate, clinical and pathological courses of tubercular phthisis, of unresolved lobar pneumonia, of chronic and catarrhal lobular pneumonia, and of pulmonary cirrhosis, have long been distinguished. All these, at least, are included in the generic name phthisis. When I say, "Have we a remedy for phthisis?" I mean, have we a remedy for this allied group of conditions,—conditions with which we have so often to deal as practitioners of the remedial art of medicine, which are due, it is true, to varying pathological changes, but which are marked in common by progressive wasting of the body,

by progressing asthenia, by progressing diminution of respiratory capacity, and by fever of a hectic type. Every case of phthisis requires special study, and ought to be treated by no rule-of-thumb practice because it is phthisis. In one case anæmia is prominent and calls for iron or for arsenic; in another, continued but scanty hæmoptysis calls for ergot or for hamamelis; in another, a racking and frequent cough calls for opium or some of its derivatives; in another, dyspepsia calls for alkalies or for acids, for bitters, or for proteolytic or amylolytic digestives; in another we have to aim at controlling profuse perspiration or at checking an exhausting diarrhœa. Apart from these and other particulars, I suppose practitioners are agreed that cod liver oil, given either alone, or variously combined with other agents which tend to promote its assimilation or supplement it as a restorative, stands at the head of remedies designed to advance the general nutrition of

the phthisical. Have we any other general remedy? For a long time I trusted to syrup of the iodide of iron. This I gave up for a mixture of hypophosphites and iron—five grains of hypophosphite of lime, ten grains of hypophosphite of soda, and fifteen minims of syrup of the phosphate of iron, for a dose. This is a good combination, and I still use it. But chloride of calcium is my favourite general drug in pulmonary consumption. I have used it very extensively for many years, in hospital and in private practice, and I believe with great advantage. Perhaps you will say, in a commendable spirit of logical scrutiny, do you give chloride of calcium alone? I do not. I give it with cod liver oil, or with some emulsion of cod liver oil, in a separate watery solution; or I combine it, according to circumstances, with a vegetable bitter, or with morphia, or with ergot, and I believe I get better results with chloride of calcium in these combinations than I do with anything else

in the same combinations. By the logical method of "concomitant variations," in the limited and qualified sense in which it is applicable to ordinary therapeutic experience, I have worked out to my own satisfaction the practical induction that chloride of calcium is, next to cod liver oil, our best general remedy in phthisis. Those of us who are in earnest, and who believe that therapeutic art—an art which includes, but which is much more than, the administration of combinations of the materia medica—can powerfully modify morbid processes, and can powerfully aid the *vis medicatrix naturæ*, and who think well of what we do, have done, have not done, and shall do for our patients, must be constantly arriving at conclusions, as the result of observation in our own practices, which modify, confirm, correct, or extend our therapeutic conduct. These conclusions may not always be framed by formal canons or able to bear the test of an exhaustive logical scrutiny, but, if such

conclusions, which we are constantly forming for ourselves, are accepted by each of us, as reasonable and responsible men, as guides for our own therapeutic action, they are eminently worthy of communication to our brethren. On this conclusion I have long acted with confidence. My attention was first called to the value of chloride of calcium in phthisis by a paper in one of our medical journals, wherein it was stated that the drug was much used by the late Dr. Warburton Begbie.* Scarcely mentioned, if noticed at all, in the therapeutic text books of our day, chloride of calcium has an old and well-

* Dr. Warburton Begbie read an instructive paper on "The Therapeutic Actions of Muriate of Lime" before the Medico-Chirurgical Society of Edinburgh, on May 15th, 1872. This paper was afterwards published in the *Edinburgh Medical Journal*, and is contained in Sir Dyce Duckworth's volume of "Selections from the Works of the late J. Warburton Begbie, M.D., etc," issued by the New Sydenham Society, in 1882. Dr. Begbie wrote:—"The cases in which I have had occasion most frequently to employ the muriate of lime have been instances of struma, the most notable feature of which was the enlargement of the lymphatic glands in the neck."

established repute as a remedy for strumous glandular swellings. In 1808, Dr. James Sanders, of Edinburgh, in an important work on pulmonary phthisis, wrote:—"I think that I have ascertained that the muriate of lime has a more powerful effect in removing indolent scrofulous tumours than any other substance used as a remedy." † In subacute and chronic cases of pulmonary consumption I usually give ten grains of chloride of calcium, dissolved in three drachms of water and mixed with a drachm of glycerine, in a wineglassful of water or milk, twice daily, immediately after meals. I think the drug especially tends to check phthisical night-sweats, and that it favours increase of weight, and the drying up of pulmonary lesions. Of course I do not maintain it does these things in all cases. What I have stated are general conclusions,

† "Treatise on Pulmonary Consumption." By James Sanders, M.D., Edinburgh, 1808.

open, I am aware, to objection on the ground of their insufficient logical basis, but they are conclusions which have been and are for me amongst my most trusted indications for therapeutic action. In prescribing chloride of calcium, we must be careful to write the name of the remedy distinctly and in full, in order to avoid an error from which one of my patients suffered, namely, the substitution of "chloride of lime" for the drug I had intended to use. In the therapeutics of phthisical and tubercular disorders the natural saline mineral water of Leamington Spa may be useful in some cases. This water is peculiar in the large proportion of chloride of calcium it contains. So far as I know, this proportion is greater than in any other natural medicinal water. Leamington water, at the temperature of 40° Fahr., has a specific gravity of 1·0127, and contains:—

	Grains per gallon.
Sulphate of Sodium	287·76
Chloride ,, ,,	688·16
,, ,, Calcium	166·32
,, ,, Magnesium	94·88
Silica	0·96
Iron	0·88
	1238·96.

V.

SOME POINTS IN THE TREATMENT OF THE SEVERER FORMS OF CONSTIPATION AND OF INTESTINAL OBSTRUCTION.*

Difference between constipation and intestinal obstruction.—Remedies in habitual constipation.—Signs of fæcal retention.—Enemata.—Varieties of intestinal occlusion.—Symptoms of intestinal occlusion.—Treatment of intestinal occlusion.—Value of combinations of therapeutic resources.—When surgical interference is indicated.—Choice of surgical procedure.

I PURPOSE to make some remarks upon

* A paper read before the Birmingham and Midland Counties Branch of the British Medical Association; published in the *British Medical Journal*, November 17th, 1883; since revised and rewritten.

several points in the treatment of the severer forms of constipation and of intestinal obstruction. I venture to do so because the subject of fæcal retention and of occlusions of the bowel is a practical topic of the greatest importance to us as medical and surgical practitioners, because the details upon which I shall touch have especially and long engaged my attention as a physician, and because I hope I may be fortunate enough to lead the way to a discussion from which we may all reap substantial profit. It is not my intention to attempt anything like a complete examination of the whole question of constipation and intestinal obstruction. The subject, if treated systematically, could not be dealt with, even in a cursory manner, within the limits of the time at my disposal. You know that the literature of the subject is very extensive, that it reaches back to the earliest records of medicine, and that I could not give a summary of it within the compass of a

readable paper; you know that intestinal lesions, and especially those pathological changes which tend to fæcal obstruction and intestinal closure, have shared in being subjects of the analytical precision which is the leading note of the medicine of our century, and that I could not recount their details within a single sitting of our society. Keeping to what is practical in the pathology and practicable in the treatment of some of the commoner forms of constipation and intestinal obstruction, as I have met with them in my own reading and clinical experience, I purpose to ask you to consider with me the progress of our art in one of the most important and most striking departments of its usefulness.

We must avoid a common confusion of terms in the use of the familiar words constipation and intestinal obstruction. It is not strictly accurate to speak of intestinal obstruction, as some writers have done, as an exaggerated, an ultimate, form of constipation.

It is quite true that some of the worst and most fatal forms of intestinal obstruction are usually long marked by a prodromal constipation, as, for example, cancerous constrictions of the larger intestine. But the phrases constipation and intestinal obstruction, when properly understood, do not merely mark different degrees of a similar result. They apply to different extents of the intestinal tube. Constipation concerns the large intestine only; intestinal obstruction the whole of the intestines, small as well as large. Constipation is slow fæcal progress in the large intestine, where alone true fæces are to be found. Intestinal obstruction is a grave disturbance of intestinal permeability in any part of the intestinal canal; it is practical impermeability of the intestines to the passage of their contents, either in the large or in the small intestine, in any part of the bowel, from pylorus to anus. "Constipation is essentially slow progress of the fæculent mass from the

cæcum to the anus."* It is this, and nothing more than this, so far as the mere position of the difficulty concerns us, albeit the pathological causes of constipation, when organic, and when such as narrow the lumen of the bowel, are apt, in their extremer developments, to determine intestinal occlusion.

The manifold errors of habits, of effort, and of diet which tend to constipation are well recognised by our profession. In the discovery of some of these, and in their timely and persistent rectification, we can cure, without drugs, many of the slighter forms of fæcal retention. We should make quite sure we exhaust these measures in the treatment of every case of habitual constipation. In the slighter cases, such non-medicinal treatment is usually sufficient for a good result; in severer cases, when drugs and

* This sentence is quoted from a clinical lecture on "Retention of Fæces," by Dr. Matthews Duncan, published in *The Medical Times and Gazette*, Nov. 8th, 1879.

instrumental aid cannot be avoided, all that well-ordered habits, well-directed efforts, and well-chosen diet can do should be regarded as the indispensable adjuvants of a more direct therapeusis.

Our pharmacopœias, officinal, non-officinal, and popular, are richer in purgatives than in remedies of any other class. I must not digress into a comparison of the relative values of our cathartic drugs, although the subject is a very tempting one. The practitioners of rational medicine have accumulated a vast store of precise and valuable information concerning the actions of purgative medicines, and this important branch of therapeutics is still growing. Each of us has his favourite cathartics; if we have tried their adoption well, we should not lightly change them. For cases of habitual constipation which do not yield without drugs, my favourite remedy is Socotrine aloes. I have little faith in belladonna and none in nux vomica. Aloes

is especially useful in the fæcal sluggishness of sedentary persons. Properly given, the drug may be taken daily for years, without either losing its aperient efficiency or producing any but the best results. I give one, two, or three grains of Socotrine aloes in a pill, combined with a quarter of a grain of sulphate of iron and one grain of extract of hyoscyamus, at bedtime, every night.* I find out in each case the exact quantity of aloes required to produce one full alvine evacuation after the first morning meal. In this combination the quantity of aloes will need readjustment from time to time, usually

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* We are indebted to that veteran therapeutist, the late Sir Robert Christison, for the valuable suggestion of combining iron with aloes when we use aloes as a laxative. Neligan, in reference to the use of aloes in habitual constipation, wrote :— "Christison states that the cathartic property of aloes is much increased by its combination with sulphate of iron, and that its irritating action on the rectum is counteracted by combining it with the extract of hyoscyamus; both of which statements my experience fully confirms."—Neligan's Medicines, edited by Macnamara, 6th edition, p. 130.

in the direction of reduction.* I shall mention only one other drug for the class of cases I am now considering, namely, the American cascara sagrada. From my former experience of so-called new drugs, I have learned to employ such preparations with much caution and to recommend them with more. But I now venture to state that I have used cascara sagrada in many cases of severe habitual constipation, with marked success. I have given from fifteen to thirty minims of the officinal extract, thrice daily, adapting the dose by the result, and endeavouring to secure one, or at most two, dejections in each twenty-four hours.

The ordinary symptoms of extreme fæcal retention are well known. Our experience, in the main, justifies us in expecting that such symptoms shall be acute, or at least subacute,

* I was led to adopt this combination of aloes and iron in the treatment of habitual constipation by reading a paper by the Rev. David Bell, M.D., which was published in *The British*

in their urgency and duration; and that they shall be associated with complete temporary absence of alvine dejections, or at least with very obvious insufficiency of such evacuations both in quantity and frequency. But we shall fall into error sometimes if we expect considerable fæcal retention always to be marked in this way. Of exceptional forms of extreme fæcal retention, I have met with two distinct varieties. In both the process

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Medical Journal, Nov. 5th, 1870, entitled "Remarks on the Beneficial Effects of Combining Tonics with Aperients in Chronic Constipation." Dr. Bell stated in this paper that he had tried various combinations of drugs in the treatment of constipation, and had come to the conclusion that the best formula was the following:—R. Aloes Socotrinæ, extracti hyoscyami, āā gr. xij.; quinæ disulphatis, gr. vj.; ferri sulphatis, gr. iv. To be well mixed and divided into twelve pills. Dr. Bell has found these pills to produce uniformly good results, without inconvenience. Dr. Kent Spender, of Bath, has kindly drawn my attention to his admirable paper on "The Therapeutics of Chronic Constipation," published in *The Medical Times and Gazette*, Feb. 19th, 1870. Dr. Spender recommends minute and frequent doses of watery extract of aloes, given in combination with sulphate of iron. He informs me he has treated cases of habitual constipation with pills of aloes and iron for the last twenty-five years, with excellent results.

of accumulation has been but slow: in one the graver signs of intestinal obstruction have at last become urgently and rapidly developed, as it were as a climax; while in the other and rarer form of slowly developed fæcal retention the condition has been chronic throughout, and the disorder has not perhaps been recognised until after a belly only distended by a dilated colon filled with fæces has been regarded as the seat of a huge tumour, the nature of which has been variously interpreted. I have known the extremest fæcal retention, filling the belly, encroaching on the thorax, and displacing the liver, lungs, and heart, presenting itself as a chronic condition lasting for many years. Let me quote very briefly an extreme and very instructive instance of this kind from my note-book. In the year 1871, a medical friend sent a case to me at the Queen's Hospital, as one of obscure abdominal tumour, which had long resisted treatment at two neighbouring medical

charities, and about the nature of which he was in doubt, and desired my opinion. I found the patient a pale, ill-developed girl of fourteen. Her mother stated that when the child was only two years of age, it was noticed there was some enlargement of her belly. The child's bowels had habitually been confined, a week or more often elapsing without the passage of a motion. The evacuations generally consisted of small portions of hardened fæces; but, from time to time, frequent and scanty liquid stools were passed. The quantity of urine appeared to have been normal; the appetite poor and capricious. The abdominal enlargement had gradually increased up to the time of the patient's application to me. I at once admitted the girl as an in-patient. I found she complained of occasional griping pains in the belly. She had never had any vomiting. Her motions were small in quantity and watery. The tongue was clean. There was no pyrexia.

The body was fairly nourished. The abdomen was generally enlarged, and the lower part of the thorax expanded. The superficial veins of the abdomen were slightly enlarged. A solid tumour could be felt to occupy the whole of the right side of the abdomen. It had no distinct margin above, and reached, laterally, about two inches to the left of the middle line; below, the edge of the hand could be readily passed between the tumour and the pelvis. The tumour was uniformly dull on percussion; palpation gave the impression of a doughy consistence, and firm and sustained pressure with the tip of a finger upon the mass produced a depression which lasted for some minutes after the finger was withdrawn. The heart was displaced upwards considerably; its apex was found to strike the chest-wall at a point one inch and a half above, and one inch to the inner side of the left nipple. The circumference of the abdomen at the umbilicus was thirty-one inches. The rectum was found

to be largely distended, and filled with hardened fæces. The patient was ordered a pill, consisting of a grain and a half of Socotrine aloes, half a grain of extract of hyoscyamus, and a third of a grain of extract of nux vomica, to be taken with a drachm of sulphate of magnesia in one ounce of infusion of roses, thrice daily. An enema of cold water and table salt was given night and morning. Before the administration of the first enema, I freely broke up the contents of the rectum with my forefinger and the handle of a large tablespoon, and I removed a very large quantity of hardened fæces, together with three plum-stones. On the following day, two chamber-pots were literally filled to the brim with pultaceous fæces, and the abdomen was found markedly diminished in size. On the next day, two chamber-potfuls of fæces followed the morning injection. On the following day, three copious motions were passed. On the next day there were two free actions of the

bowels, and it was noted that the abdomen was smaller and softer, and that the heart's impulse had fallen to the level of the left nipple. In three days more, the enemata were finally discontinued. Careful physical exploration failed to find any abnormal signs in the abdomen. Faradisation was ordered to be gently applied to the abdominal muscles daily. From this time the patient did well, without interruption, and was discharged fourteen days after her admission. She attended a short time as an out-patient, taking steel and an aloetic purgative, and remained well, without any fæcal reaccumulation. In this case you will notice that extreme fæcal retention, sufficient to displace the heart into the infraclavicular region, to distend the superficial veins, and to form a very large abdominal tumour, was unattended by vomiting, scanty urine, abdominal tenderness, or other local disturbance than "occasional griping pains in the belly." You will notice, too, the record of

an important point in diagnosis. A large portion of the patient's abdominal cavity was obviously occupied by some solid mass. I had to decide upon the nature of the abnormality. I found that firm and sustained pressure with the fingers over the tumour produced a depression in its mass, which lasted for some minutes after pressure was withdrawn. This very exceptional physical sign is almost absolutely diagnostic of considerable fæcal accumulation. The successful progress of the case illustrates, also, the value of using together a variety of therapeutic measures. In the treatment of fæcal retention, the best results are only obtainable by the adoption of a well-considered combination of remedial resources. I did not rely on only one method of emptying the distended intestine. I broke up and dug out all the excrement I could reach through the anus; and I kept up the concurrent and continued use of aloetic purgatives, enemata, and faradisation.

I am afraid our profession does not adequately appreciate the immense advantages to be derived in the treatment of many of the severer forms of constipation and intestinal obstruction by the efficient use of the enema. In France, I understand, the enema is the routine domestic aperient. We do these things better in England. The custom of relieving slight constipation by an immediate resort to an enema has never become popular on this side of the Channel, and it is well it is so. My experience has led me to discountenance decidedly the systematic use of rectal injections in the ordinary domestic treatment of the slighter forms of fæcal sluggishness. Such cases may be treated better, and especially with less tendency to chronicity, by other means. On the other hand, however, in the severer forms of fæcal retention, we ought always to use aperient enemata, and we must take care we use them efficiently. In persons past the meridian of life, and especially in

persons of sedentary habits, what may be called simple fæcal retention is a very frequent form of constipation. In such persons this form of constipation is relatively very frequent, both as compared with other varieties of constipation, and also as compared with the same form of constipation at other times of life, and in individuals of other habits. In such persons coprostasis (a good old name for fæcal stagnation) is especially apt to produce complete intestinal obstruction. It is in these cases, especially, that life may be saved by enemata. I do not know any form of intestinal obstruction in which enemata can do harm. In most cases they take a chief place amongst our most potent means of doing good. In many cases which at first are unpromising, and even when the predisposing cause of the obstruction is some organic and incurable disease, we may repeatedly relieve a threatening fæcal accumulation, and long keep off a fatal fæcal stagnation, by the due use of enemata. It is, perhaps, not

too much to say that enemata far surpass any other remedies in curative value in the simple coprostasis of advanced life. Within the limits of this paper I cannot particularise all the practical details of apparatus, of quantity, quality, and frequency of intestinal injection, and the various manipulative niceties of administration, concerned in the question of the therapeutic use of aperient enemata. But I would take this opportunity of affirming that in all severe cases of constipation, and in all cases of intestinal obstruction in which we use enemata, we can only administer our injections efficiently by means of the long tube of O'Beirne. Let me recommend O'Beirne's classical treatise on defæcation to those who are unacquainted with it.* Than from a study of its pages I do not think I have ever reaped more practical profit from any of my medical reading. The gist of O'Beirne's book is the

* New Views on the Process of Defæcation, &c. By James O'Beirne, M.D., Dublin. 1833.

recommendation of the long enema tube, which for fifty years has been known by his name. Never entrust the use of O'Beirne's tube to a nurse. The efficient passage of the instrument into and through the sigmoid flexure of the colon is a delicate and difficult operation, which the medical attendant ought always himself to perform for his patient. Much unnecessary detail has been taught about the composition of enemata. When we use an enema for the purpose of clearing the bowel of fæces and flatus the quantity of the injection is its chief quality. I am accustomed to tell my pupils that when they give an enema they should always ask themselves whether it is to be retained or returned ; if it be designed that the injection shall be retained, as in the case of a nutrient or sedative enema, its quantity can scarcely be too small. If, on the other hand, it is intended to move the bowels to the expulsion of their contents, the quantity of an enema can scarcely be too large. The

quantity of an aperient injection is precisely so much of it as can be passed into the bowel, without undue force. For such an enema to be so large as possible is only to be large enough.

I now ask you to favour me with your further indulgence while I consider very briefly the celebrated question of the treatment, and especially the operative treatment, of intestinal occlusion. I feel I need not apologise because, as a physician, I ask you to consider with me the operative treatment of intestinal impermeability. In the treatment of this most grave and anxious condition, it usually happens that it is not only the office of the physician to determine whether and when the aid of the operating surgeon is to be sought, but also to join with him in deciding upon the special operative measures to be adopted in each particular case. This question is no new one; it is celebrated in the records of controversies which reach back to the earliest portions of our literature.

Whatever our conclusions on this question, they can only be accepted as provisional. From time to time its issues must be examined anew, so that they may be brought to the level of our latest curative advances. It is especially necessary that we should often recur to this important question now, when we are witnessing such rapid advances in the safety, precision, and scope of abdominal surgery.

I shall not pause to enumerate the long list of lesions which may determine the clinical urgencies of intestinal impermeability, and which, by causing that most grave condition, may demand from us relief if life is to be preserved. As intestinal compressions, constrictions, degenerations, displacements, distortions, impactions, obturations, and stenoses, these manifold pathological conditions have been fully described. If, with practical purpose, we translate the anatomical causes of intestinal occlusion into their clinical manifesta-

tions and history, we shall find that they fall into three fairly defined groups. *A: Causes which come into operation quite suddenly, and which lead at once to complete intestinal occlusion.* Here we have sudden compressions, displacements, and distortions, as all kinds of strangulations and torsions or kinks, some cases of intussusception, especially in children, and some cases of plugging by gall-stones. *B: Causes which manifest themselves acutely, but which do not give rise to immediate and complete occlusion, although they produce very grave disturbances of intestinal permeability.* Here we have partial strangulations of all kinds, many cases of intussusception, many cases of peritonitis, and cases of partial obturation by gall-stones and foreign bodies. *C: Causes which are developed slowly, and which give rise often for weeks, months, or years, to marked signs of impaired intestinal permeability, and which either lead to a series of subacute seizures of intestinal occlusion,*

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yielding for a time to treatment, but successively increasing in severity and danger, or culminate in a single sudden and final attack of complete and unyielding obstruction, or lead to death in some indirect way, as by perforation, peritonitis, or asthenia. Here we have intestinal cancers and neoplasms generally, strictures and stenoses of all kinds, chronic local or general peritonitis, compressions from the pressure of slowly growing tumours, and fæcal impactions and chronic fæcal retention from degenerative changes in the muscular coats of the larger intestine.* These various conditions teem with practical interest, both in the niceties of their differential diagnosis, and in the details of their varying therapeutic requirements. Into these points I cannot now enter, but I would state generally that by a considera-

* This classification is a modification and amplification of one to be found in Dr. Leichtenstern's valuable essay on "Constrictions, Occlusions, and Displacements of the Intestines," contained in Dr. Von Ziemssen's Cyclopædia of the Practice of Medicine. See English translation, Vol. VII., page 487, *et seq.*

tion of the age of the patient, of the history of his illness, of his special symptoms and physical signs and of the results of our treatment, checked by a recollection of the pathological possibilities of intestinal occlusion and some accurate knowledge of their relative frequencies, we can usually make a practically correct diagnosis, both of the particular portion of the intestine which is affected and of the pathological nature of its lesion. I cannot, however, leave this part of my subject without reference to certain well-ascertained statistics and approximate generalisations which are of great practical importance, and which have often stood me in good stead at the bedside in the diagnosis of the kind and place of an intestinal occlusion. Firstly, it is generally true that sudden and very marked obstructions, such as strangulations, torsions, intussusceptions, and pluggings, affect the smaller intestine, while more chronic but less accentuated difficulties of permeability, such as strictures,

cancers, and intestinal degenerations, affect the larger intestine. Again, an intestinal stricture is a circumscribed diminution of the lumen of the bowel. It arises either from contraction of the mucous and submucous tissues, or from the encroachment upon the intestinal canal of some new growth from the intestinal walls. The latter process is usually cancerous, the former is usually a consequence of ulceration. "Stricture may be met with in any part of the intestine, yet it occurs in different parts with very different degrees of frequency. The published statistics of fatal cases show that its occurrence as a fatal disease in the small intestine is comparatively rare (according to Dr. Brinton* in 8 out of every 100 cases); and that, as regards the large intestine (to quote again Dr. Brinton's figures, with which those of other writers agree pretty closely), out of 100 fatal cases, 4 are in the cæcum,

* Intestinal Obstruction. By W. Brinton, M.D., F.R.S. 1867.

10 in the ascending colon, 11 in the transverse colon, 14 in the descending colon, 30 in the sigmoid flexure, and 30 in the rectum. Dr. Brinton calculates that stricture occurs three times in men to twice in women; and that the average age at death is $44\frac{2}{5}$ years."*

From these figures we may gather the important practical generalisation that at least four-fifths of the strictures of the larger intestine are situated to the left of the middle line of the body. Again, excluding the grosser forms of hernia, of all the different forms of obstruction of the bowel, intussusception is the one which is "most commonly attended with the presence of manifest tumour;"† and further, excluding cancerous disease of the larger intestine, the discharge of blood *per anum* is characteristic of intussusception, and

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* Obstruction of the Bowels. By J. S. Bristowe, M.D., F.R.C.P. Reynolds' System of Medicine, Vol. III., page 74, *et seq.* 1871.

† Dr. Bristowe. Op. cit., page 100.

is generally present from the onset of the affection. Again, we have Mr. Jonathan Hutchinson's valuable generalisations, from which I select the following as being the most reliable, and therefore the most important. "When a child becomes suddenly the subject of bowel obstruction, the malady is probably either intussusception or peritonitis. When an elderly person is the patient, the diagnosis will generally rest between impaction of intestinal contents and malignant disease. In middle age, the causes of obstruction may be various, but intussusception and malignant disease are now very unusual. If repeated attacks of dangerous obstruction have occurred, with long intervals of perfect health, it may be suspected that the patient is the subject of a chronic diverticulum, or has bands of adhesion, or that some part of the intestine is pouched and liable to twist. If, in the early part of a case, the abdomen become distended and hard, it is almost certain that there is peritonitis.

If the intestines continue to roll about visibly, it is almost certain that there is no peritonitis. This symptom occurs chiefly in emaciated subjects, with obstruction in the colon, of long duration. The tendency to vomit will usually be relative to three conditions, and proportionate to them. These are, (1) the nearness of the impediment to the stomach; (2) the tightness of the constriction; and (3) the persistence or otherwise with which food and medicine have been given by the mouth."*

No clinical spectacle is more terrible than that afforded by a case of acute and complete intestinal obstruction. All of us, probably, have seen some examples of it. In the midst of perfect health, without obvious cause or warning, or after some unusual and sudden muscular effort, or after a blow on the belly, or after a trifling diarrhœa or some slight constipation, or following some ordinarily insignificant error of

* Notes on Intestinal Obstruction. By Jonathan Hutchinson, F.R.C.S. *British Medical Journal*, August 31, 1878.

diet, a vigorous adult is seized with severe pains in the abdomen. The pains are mostly griping and colicky in character, they usually come and go at short intervals, and they are usually referred to the neighbourhood of the navel. Sometimes the pains are excruciatingly violent, or they are persistent, or they spread over the whole of the belly, or they are of a "bearing-down" character, and are attended by painful but fruitless efforts at stool. Acting on the familiar hypothesis that something has "disagreed" and requires clearing off, the patient usually forthwith takes a domestic purge. The pains continue and grow more frequent and severe, and the bowels remain unrelieved. At this stage vomiting generally appears, and a doctor is summoned. The gravity of the patient's condition is usually recognised, and pains are quelled and peritonitis staved off by opium, while efforts are made to open the bowels by enemata; sometimes, unhappily, the pathological possibilities are not adequately

appreciated, and the stronger cathartics are injudiciously administered. Save for the passage of a little delusive flatus, or of the contents of the bowel below the difficulty, the belly remains ominously closed. Vomiting continues, and, in a variable time, the vomited matter becomes fæcal in appearance and odour, while at first it consisted only of ordinary stomach-contents, or of a bilious watery fluid. The case grows more desperate; marked collapse soon declares the patient's increasing danger. The extremities chill, the respirations become shallow and frequent, and the voice fails and thickens, while the pulse is small and rapid, the abdomen distended and drummy, and the face pinched, with pointed nose, sunken eyes, and thin, retracted lips. Hour by hour, and day by day, the sufferer grows worse, until, bathed in cold sweats, with parching thirst, frequent fæcal eructations, hiccup, shortening and shallower breathing, voice all but extinguished, dry brown tongue, Hippocratic face,

failing and uncountable pulse, and mind unclouded to the end or gently wandering in the last few hours, death closes one of the saddest and sharpest scenes which human misery can show.

But the terrible and lethal condition* I have endeavoured to describe is not wholly hopeless. It is true it is very generally fatal, within six days at the most, yet patients have got well without surgical operation, even when internal strangulation has brought them to the very verge of death. Surgical art, I freely and thankfully acknowledge, has rescued not a few whom the skill of the physician has proved powerless to save, and this art promises, I believe, to include in a not distant progress a material reduction in the present high mortality of intestinal closure. "There is no cause of acute occlusion of the intestine," writes Leichtenstern, "which cannot spontaneously disappear as well as originate.

* "Morbus terribilis, creberrime letalis."—De Haën.

An intestinal knot can loose itself, an incarcerated or strangulated loop can become free, an invagination can become disengaged, compression cease, twisting or dislocation of the intestine with angular bend can straighten itself, a lodged gall or intestinal stone or foreign body may be dislodged and evacuated, and severe fæcal obturation may be overcome."* But we must never forget, I would strongly insist, that the relative proportion of cases of spontaneous recovery from acute intestinal occlusion is very small indeed—so small as to support only a very uncertain hope of life in any particular case. I fear such a hope is often a harmful one, for I am afraid that its sympathetic exaggeration has sometimes inspired a disastrous inactivity, which has frittered away in fruitless endeavours and vain expectations the hour for a fair cast for life by surgical interference.

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* Leichtenstern. Op. cit., page 508.

For want of time, I am compelled to pass over many important points in the treatment of intestinal occlusions, such as, for example, how far purgatives are to be given, if at all, the use of opium, of ice, of the best methods of feeding, of copious enemata, given while the patient is inverted or otherwise, of abdominal kneadings and manipulations, of warm baths, of rectal insufflation of air, of intestinal puncture with an aspirating canula. We do well to combine these measures variously, according to the special indications of each particular case, for clinical experience has abundantly shown that cases of obstruction of the bowel, even when they appear most unpromising, not seldom exhibit the best results of a wise combination of therapeutic resources. But I must now pass by these important topics, because I want to raise again the question, whether, when, and how the abdomen is to be opened for the relief of unyielding intes-

tinal closure. If it be clear we have to deal with a case of acute intestinal occlusion, if a reasonable delay have been afforded for the operation of suitable therapeutic procedures and for a chance of spontaneous relief, if a due examination of all the hernial openings, including the obturator foramina, the sciatic notches, and the vagina, in the female, has excluded the evidence of external strangulation, if the rectum be found free, if full enemata, the passage of O'Beirne's tube, and exploration of the abdomen and loins by percussion and palpation have demonstrated that the difficulty is not in the colon, then the question must be decided whether laparotomy or laparo-ileotomy should be undertaken or not.

Laparotomy is abdominal section. Laparotomy may be performed in a case of intestinal obstruction with the view of finding and effectually relieving intestinal occlusion. Laparo-ileotomy is abdominal section, plus the formation of an artificial anus in the ileum.

Against the performance of laparotomy the following considerations may be urged, with various degrees of cogency, namely :—There are some cases of acute internal strangulation which cannot be relieved by laparotomy; consent is not usually given to the operation until the patient is so far *in extremis* that recovery is impossible; the intestine may be found so brittle that it is impossible to avoid fæcal extravasation into the peritoneal cavity; the surgeon may not find any obstruction to relieve; the diagnosis may be incorrect; there is always a chance of spontaneous recovery; the operation in itself adds very seriously to the risk of death; the results of laparotomy are not such as to justify the performance of the operation. But, to these considerations it may be answered, the cases of acute intestinal strangulation which cannot be relieved by laparotomy, such as very complicated and extensive volvulus, are so rare, as to be practically unworthy of consideration in determin-

ing our action in any particular case; again, that laparotomy has hitherto been performed only when the patient has been in a hopeless condition is not an argument against the performance of the operation, but only a reason why the procedure should be adopted earlier; and again, the difficulty of diagnosis in cases of acute intestinal closure is daily diminishing, and is already sufficiently certain for all practical purposes, and if the diagnosis of the nature of the exact lesion in any particular case be obscure, there is usually no difficulty in the prognosis that the patient will die unless relieved, and laparotomy gives him, at least, a chance of life. I have already said that the chance of spontaneous recovery is so small as not to be a just ground for putting off an operation when other means have had a fair trial, and have failed. With regard to the pouring out of fæces into the abdominal cavity, from the breaking of the intestine from extreme brittleness during a surgeon's search

for an occlusion, I may say that I have seen such a case myself, and that I find instances of this fatal condition are recorded as having occurred in the experience of Billroth, Fergusson, and other eminent surgeons. In my case the patient was a young lady, in perfect and vigorous health up to her seizure with symptoms of acute intestinal closure; we did not put off the operation too long, and the case seemed quite favourable for the performance of laparotomy with a fair chance of success. As to the operation of laparotomy being a serious risk in itself, I suppose I shall be told that in these days it is not. But when we have duly weighed all these considerations for and against laparotomy, it seems to me that the strongest point in favour of the operation lies in the practical hopelessness of acute intestinal occlusion if left to itself; while the strongest point against the operation is to be found in the records of its results. No very large statistics of the results of laparotomy

have been collected; and those which have been published probably show a better result than the truth, because of the unfortunate tendency amongst us to think our unsuccessful cases unworthy of publication. I find, however, that Leichtenstern has collected seventy-nine cases, giving fifty-five deaths, or a mortality of seventy per cent. So far as cases within my own knowledge have enabled me to judge, I have been inclined to conclude that it is usual, in laparotomy, for a surgeon to find "something," and to relieve it, and that it has nevertheless been very usual for the patient to die shortly afterwards.

I have good authority for stating that laparo-ileotomy is an operation "far less dangerous than laparotomy, and more easy of execution."* Upon this point, which I regard of great practical importance, I hope I may be so fortunate as to elicit the opinion of my

* Leichtenstern. Op. cit., page 663.

surgical brethren. I have a strong impression, based on some experience of the results of abdominal sections performed in cases of acute intestinal closure, that it is usually safest for the patient for the surgeon to follow the great example of Nelaton, and not to attempt a search for the occlusion, with a view to its direct relief, but to be satisfied with the establishment of an artificial anus in the ileum, above the seat of intestinal stoppage. As compared with laparotomy, laparo-ileotomy is a much safer operation, and a much easier one. Even the relative disadvantage of a permanent artificial anus is not always entailed; for many cases of successful laparo-ileotomy have been recorded in which the artificial anus healed upon the spontaneous establishment of intestinal evacuations *per vias naturales*. I once met with a case of this kind in an elderly gentleman, whom I saw in consultation with my friend and colleague, Mr. Oliver Pemberton. Excluding cases of insuperable intes-

tinal obstruction in the colon and rectum, for which well established and special surgical procedures are required, there is, I think, only one class of cases of closure of the intestine for which laparo-ileotomy is unsuited, namely, for cases in which the occlusion is situated very high up in the bowel. These cases, which are very exceptional, are indicated, amongst other signs, by the absence of marked or of general tympanites.

My experience and my reading have led me to the following conclusions :—

If I had to deal with a case of acute intestinal closure affecting the smaller bowel, other than a case of external hernia, I should allow a fair opportunity for relief by such remedies as opium, enemata, time, and belladonna ; but I should by no means wait until the patient was *in extremis* before I urged surgical interference. If I obtained the patient's consent to such interference, I should hope my surgical colleague would perform laparotomy

and relieve the occlusion, but only if its seat were so near at hand and its nature so clear that the operation could be thoroughly accomplished without much search amongst intestinal coils; but I should hope that he would rather perform laparo-ileotomy than subject the patient to the direct and collateral risks of a prolonged effort at disentangling his abdominal viscera.

But, as I have already said, our decisions on these topics can only be provisional, as, indeed, all our therapeutic decisions must be, if we be worthy the name of scientific practitioners. The scientific spirit accepts no result as final, but, with stern impartiality, presses steadily onwards to fuller truth, by ever assimilating the fruits of an ever widening knowledge. In such a spirit, if we are faithful to it, we shall still expect and still secure further vantage in our conflict with disease, and in this spirit our practice shall ever promise progress, and our art attempt and accomplish achievement.

Since this essay was first written the progress of medical and surgical opinion and practice has moved in the direction of earlier operative interference by laparotomy in cases of intestinal occlusion other than those of simple fæcal impaction. This progress is founded upon two solid grounds, namely, upon the increased precision we have acquired in the differential diagnosis of the various forms of intestinal closure, and upon certain improvements in the surgical details and curative results of the treatment of such closure by abdominal section.*

My friend and colleague, Mr. Jordan Lloyd, in a valuable paper, "On Acute Intestinal Obstruction and its Treatment by Abdominal Section, with illustrative cases," published

* For example, Dr. R. H. Fitz (in a paper upon the Diagnosis and Treatment of Acute Intestinal Obstruction, published in the *Boston Medical and Surgical Journal*, November, 1888), after analysing the symptoms of strangulation, intussusception, twist, gall-stone, strictures, tumour, &c., concluded that the symptoms, apart from stoppage of the bowels, the presence of which establishes a diagnosis of

in *The Lancet*, April 19th, 1890, gives the following conclusions:—" 1. In acute intestinal obstruction our attention should be primarily directed to the strangulation of the walls of the bowel rather than to the stoppage of the fæcal current. When strangulation exists immediate operation is demanded. 2. The ordinary text-book distinctions between obstruction in the large and small bowel are not always to be depended on. 3. In all obstructions above the rectum calling for operation, median abdominal incision is the proper primary procedure. 4. When the abdomen is opened the examination of its contents should be systematic and expeditious, * * * and if the obstruction is not quickly

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acute intestinal obstruction, are abdominal pain, nausea, or vomiting, abdominal tympany, and abdominal tumour; and he goes on to say:—Acute intestinal obstruction is diagnosticated by exclusion. Its seat is fixed by injection. Its variety is determined by its seat, the age, antecedents, and symptoms of the patient. Its treatment is surgical, on or after the third day, if the symptoms are urgent and forced injections fail to relieve.

discovered the most distended coil should be fixed to the skin and opened at once. If the large intestine is the part involved, the cæcum or sigmoid flexure should be brought through a special opening made in either groin." After stating some further conclusions as to operative details, Mr. Jordan Lloyd affirms that the proportion of lives saved by abdominal section in acute intestinal obstruction will increase as earlier and more accurate diagnosis comes to be made.

VI.

ACCENTUATION OF THE PULMONARY SECOND SOUND OF THE HEART.*

What accentuation indicates.—Clinical import.—Prognostic value.—Therapeutic indications.

ACCENTUATION of the pulmonary second sound, or, to speak more precisely, accentuation of that portion of the second sound of the heart which is produced at the orifice of the pulmonary artery, and is especially heard in the "pulmonary," as distinguished from the "aortic" area, although discovered and taught by the great Skoda in the earlier days of

* A Clinical Lecture: published in *The British Medical Journal*, March 31st, 1883; since revised and rewritten.

cardiac auscultation, is not generally recognised, if I may judge from the scanty references to it in text books, and from my observations of its frequent neglect in the practice of stethoscopists, as one of the most striking and one of the most significant of the physical signs of disturbance in the mechanism and dynamics of the heart. It is a sign which is to be found in association, in causal relations which are tolerably clear and approximately constant, with the commonest of the organic defects of the cardiac orifices and valves, and with the commonest consequences and complications of embarrassed cardiac action. Rightly interpreted, it is a sign which traverses the whole domain of practice, for it conveys reliable indications in the three chief divisions of our relations with a patient, inasmuch as it is significant alike in diagnosis, in prognosis, and in therapeusis. Skoda, with his usual tendency to over-refinement—that frequent fault of physi-

cians — did not grasp the simplicity and singleness of the significance of accentuation of the pulmonary second sound. He observed the physical fact, but he went too far, and in one line in a wrong direction, in his speculation upon its import. He was wrong in his teaching, for example, as Dr. Walshe has pointed out,* that the presence of reinforcement of the second sound in the pulmonary artery will distinguish a systolic murmur at the left apex, caused by mitral regurgitation, from a murmur of like time and site, caused by friction of the blood against roughnesses on the inner surface of the ventricle. The essence of the matter is this: Accentuation of the cardiac second sound, as heard over the origin of the pulmonary artery, is an unfailing indication of increased tension in the blood current in that vessel. In that it is this, it is a trust-

* Diseases of the Heart and Great Vessels. By W. H. Walshe, M.D., &c. Fourth edition, 1873, p. 93.

worthy sign, which a little consideration will enable you to understand, of a grave pathological condition; it is an unmistakable physical accompaniment of a portentous change in an area of the blood-circulation which is vital, and which is removed beyond the reach of those tactile and metric methods of exploration which are applicable in variations of tension in the systemic arteries.

In health, the aortic portion of the second sound of the heart predominates over that produced at the valves of the pulmonary artery. That is, the second sound is louder in the "aortic" than it is in the "pulmonary" area. By this statement I mean that the second sound is louder close to the right edge of the sternum, over the lower portion of the second right costal interspace, than it is close to the left edge of the sternum over the upper portion of the second left interspace. The blood tension may be raised in pathological states; either in the systemic circulation, of

which the aorta is at the commencement, or in the lesser circulation, which passes from the right to the left sides of the heart, through the lungs, and at the commencement of which is the pulmonary artery.

Whatever raises the blood-tension in the aorta intensifies the aortic second sound ; whatever raises the blood-tension in the pulmonary artery intensifies the pulmonary second sound. What, then, is the clinical import of the variety of abnormal loudness of the second sound of the heart, to which I am directing your attention ? Answering the question broadly, I say it is beyond dispute that an increased intensity of the pulmonary second sound is due to an increase in the blood-tension in the pulmonary artery, and that this heightened tension is due to some obstruction in the pulmonary or lesser circulation. The sign is clinically associated with organic and permanent lesions of the mitral valves and of the mitral orifice. Either insufficiency of the

mitral valves, or narrowing of the mitral orifice, adds a distinct and new physical obstacle to the flow of blood through the lesser circulation. In so far as such an obstacle elicits increased force in the contraction of the right ventricle, by so much does it raise blood tension in the pulmonary artery, and consequently accentuate the pulmonary second sound. But, while this statement is strictly true as a generalisation, you must remember certain qualifying circumstances which may hold good in particular instances. Advanced mitral regurgitation, or advanced mitral stenosis, or both, may be present, and the pulmonary second sound may not be accentuated, but may even be less loud and clear than in health. This may arise from one of two causes, or from a frequent combination of them, namely, from failure in the power of the right ventricle, or from the appearance of tricuspid regurgitation. In the course of mitral disease, when the force of the right ventricle

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at last fails to compensate for the obstacle on the left side of the heart, the blood-tension in the pulmonary artery inevitably fails and falls, and with it the loudness of the pulmonary sound inevitably declines and disappears. When also, in the course of mitral disease, the tricuspid valves, as so often happens near the end, give way, the pulmonary tension is at once lowered, and its physical sign disappears. Let me emphasise these important points by quoting some words of Rosenstein. He writes:—"When the tension decreases in the pulmonary artery, the intensity of the second sound ceases; this takes place either when the right ventricle's force has been impaired by disease in the performance of its increased work, or when the right side of the heart is so filled by the increased stagnation that the ring of insertion of the tricuspid valve is widened, and the valve is no longer able to close the orifice."* I must also point out

* Rosenstein. Ziemssen's "Cyclopædia of Medicine." English translation, Vol. VI., p. 129.

to you that, in comparing the pulmonary second sound with the aortic sound in cases of mitral disease, you must remember that the aortic second sound is likely to be relatively weakened by reason of the reduced systemic tension which mitral defects entail. As Dr. Walshe points out, there is a "pseudo-accentuation of the pulmonary second sound, from real weakening of the aortic second sound, through the lessened current and diminished calibre of that vessel, that follows on long-continued mitral regurgitation."* You must not fall into the error of mistaking a pulmonary second sound of normal loudness for an accentuated sound, because it co-exists with a feeble aortic sound. On this point, which undoubtedly is sometimes a difficult one in practice, you must look to an extended experience of cardiac auscultation to aid you. The recognition of variations in the tone and loudness of the heart's sounds is a refinement

* Op. cit., page 100.

of stethoscopy which only long practice can develop. It is only when, by patient clinical work, you have acquired in your minds a sure standard of the characters of cardiac sounds that you can readily detect deviations from their normal intensity.

So far as I have been able to judge from my own observations at the bedside, the presence or the absence of accentuation of the pulmonary second sound, or the presence of a high or of a low degree of such accentuation, is valueless as a differential sign in itself in the diagnosis of mitral stenosis from mitral insufficiency. I know this statement is opposed to the teaching of some physicians and of some writers of acknowledged authority in cardiac diagnosis. Both varieties of mitral disease, whether they exist singly and pure or howsoever they may be combined, impose a morbid obstacle to the passage of blood from the right to the left side of the heart, and tend, *pro tanto*, to increase the blood-tension in the

pulmonary artery. So long as this obstacle is met by a compensating increase of force in the contraction of the right ventricle, so long is the pulmonary second sound of more intensity than in health. The presence of such accentuation is not a sign which distinguishes one form of mitral disease from another, but it is a sign common to mitral lesions in general, which rises and falls in direct proportion to the vigour of the right ventricular systole. When, in the backward march of the results of a mitral lesion, the saving force of the right ventricle becomes impaired by dilatation of that ventricular cavity or by degeneration of its muscular walls, the pulmonary second sound loses its accentuation, and the sound may become almost or quite inaudible.

You will now be able to appreciate the help which may be gained in the diagnosis, prognosis, and treatment of a given case of organic disease of the mitral orifice or valves, from observation of the condition of the second

sound in the pulmonary artery. Stating the case broadly, it may be said with approximate truth that mitral valvular defects are generally results of acute endocarditis. Of such results, they are usually both immediate in time and permanent in duration. Once established, the affection of the valves or orifice becomes a permanent defect, which never grows less, but which rather tends, by the organisation and contraction of inflammatory exudations, and by other well-known consecutive changes, to become more and more pronounced as time goes on. From the date of the endocarditis which first damaged the heart, there occurs a variable period of practically good health, or of quasi-health, but slightly impaired by certain of the less pressing signs of cardiac embarrassment. This period may vary in length from a few weeks or months to a few or many years, being determined by a variety of variously combined circumstances, such as the extent of original mitral damage and the degree of subse-

quent compensation, and the age, mode of life, social position, and habits of the patient. But, whether this period be short or long, there surely comes, sooner or later, an ultimate or penultimate stage, marked by failure of compensation and by dropsical complications, leading on to death.

Accepting this brief outline as a rapid sketch of the usual progress of mitral affections, let us answer this question :—What is the usual state of the pulmonary second sound in the progress of such a case? When the mitral disease arises, that is, from the time acute endocarditis so affects the mitral orifice or valves as to set up a physical obstacle there to the normal progress of blood through the heart, the pulmonary second sound becomes accentuated, but only slightly so, for the most part at this early stage. During the second period of quasi-health, that is to say, from the time of convalescence from the acute endocarditis until the onset

of the later secondary complications consecutive to the mitral defect, the pulmonary second sound remains only slightly reinforced. You will generally find it as loud as the aortic sound, or a little louder, but not very markedly intensified. But towards the end of this second period, when the pulmonary tension is nearing the point when it will overcome the compensating force of the right ventricle, the pulmonary second sound becomes very distinctly accentuated, and attains its maximum development. The sign is at this time of grave portent, for it is the sure index of an extremely heightened tension in the pulmonary circulation, which is not likely to be borne long; it is an unfailing sign that the pulmonary circulation is only maintained by an increased expenditure of force by the right ventricle, which cannot long be kept up. At this point a straw breaks the back of the labouring camel. A little added difficulty to the circulation through the lungs,

which usually comes as a bronchial catarrh, which would be trivial under some other circumstances, and the next, the ultimate or penultimate, stage of mitral troubles is ushered in. Compensation fails, and with it falls, *pari passu*, the accentuation of the pulmonary arterial sound. With failing compensation, viscera and surface become engorged with blood, anasarca gradually develops, and dropsical exudations begin to gather in the serous cavities.

This is the stage at which you often see patients admitted to my wards. With rest, good and carefully adjusted evacuants, and, above all, with digitalis, our great heart-restorer, many improve, lose the later complications of their mitral disease, revert to the second stage of quasi-health, which I have been describing, and return to their occupations. As they improve, as rest, suitable food, evacuants, and digitalis do good, you may notice the pulmonary second sound, which

had waned before, wax strong again, surely marking the recovery of compensation in the propulsive power of the right ventricle, which is the essential factor in the patient's relief. Here observation of the pulmonary second sound is of inestimable service. With a rising sound, our treatment is doing good, and our patient is making progress towards recovery.

But the complications of this later stage of mitral disease, unhappily, cannot always be removed even once ; and if removed once, or twice, or thrice, or oftener, there surely comes a time when all our remedies are at last of little or no avail. Be our treatment never so patient and skilful, the patient's condition remains stationary, or goes on from bad to worse. Here the compensating power of the right ventricle is finally and irretrievably exhausted ; it is past all repair. Here the pulmonary second sound never rises under our treatment, but remains feeble to the end. Its continued feebleness, in the presence of

dropsical complications, and in spite of our best therapeutic efforts, is a sure sign that the end is not far off, and that the patient is suffering his last illness.

In the congestive and dropsical complications of advanced mitral disease, I have often proved the therapeutic efficacy of a well-known combination of digitalis, squill, and blue pill.

Here is the formula for this excellent prescription :—

R. Pulv. Digitalis, gr. j.
Pulv. Scillæ, gr. j.
Pil. Hydrarg., gr. j.

Ft. pil. One to be taken thrice daily, between meals.

VII.

REMARKS ON FLOATING KIDNEY.*

Cases of floating kidney established by post-mortem examinations.—Physical signs.—Case.—Causation of floating kidney.—Frequency in women.—Comparison of anatomical relations of kidneys.—Symptoms.—Treatment.

FLOATING kidney is a substantial reality, which must always be remembered in abdominal explorations. Its existence has been abundantly established by *post-mortem* examinations.

Some years ago a committee of the Pathological Society of London, consisting of

* A digest of two papers: Floating Kidney, *Birmingham Medical Review*, July, 1872; Remarks on Floating Kidney, *Ibid.*, October, 1883.

Dr. Hare, Dr. Bristowe, Dr. Wilks, Dr. John Williams, and Dr. Wickham Legg, was appointed "to inquire into the matter of displaced, movable, and floating kidneys." From the report of this committee, which was published in 1876,* I quote the following paragraph: "Cases of undue mobility of the kidney verified by examination after death have been several times recorded. One specimen was brought before our society sixteen years ago by Mr. Durham.† Dr. Priestley has described a case, under the care of Sir James Simpson, in which after death the peritoneum was found reflected over the posterior surface of the right kidney, thus allowing great motion on the right side.‡ Other instances have been recorded by Mr. Adams,§ Dr. Iago,‖ in which the state of

* Transactions of the Pathological Society, Vol. XXVII., 1875-6.

† Durham, Transactions of the Pathological Society, 1860, Vol. XI., p. 142.

‡ Priestley, *Medical Times and Gazette*, March 14, 1857.

§ Adams, *Ibid.*, p. 651.

‖ Iago, *Ibid.*, 1872, Vol. II., pp. 328 and 409.

the kidney was diagnosticated during life and verified by examination after death, Dr. Sawyer,* Girard,† Urag,‡ and others."

A floating kidney is a movable kidney, and something more. For a clear definition of this distinction we are indebted to Sir William Jenner. "A movable kidney is one thing; a floating kidney is another. . . . . A floating kidney is a kidney that has a mesentery—a fold of peritoneum attaching it very loosely to the spine. A floating kidney, therefore, can be moved about to a considerable extent—to the extent of the length of its mesentery. A movable kidney can only be passed up and down a little; it slips a little under your fingers."§

The largest statistics concerning movable and floating kidneys with which I am acquainted are to be found in the well-known

* Sawyer, *Birmingham Medical Review*, 1872, p. 120.

† Girard, *Journal Hebd.*, 1836, p. 445.

‡ Urag, quoted by Fritz. *Arch. Gen. de Med.*, 1859, p. 167.

§ Clinical lectures on the "Diagnosis of Extra-pelvic Tumours of the Abdomen." By Sir William Jenner, Bart., M.D., &c., *British Medical Journal*, January, 1869.

treatise of Sir William Roberts on renal diseases. From these figures, from six cases of floating kidney which I published in the first volume of the *Birmingham Medical Review*, from several cases which I have met with since in my practice, and from other instances which I have found recorded, it appears that preternatural renal mobility may be either unilateral or bilateral, that it is more frequently unilateral than bilateral, that the right kidney has been affected about four times as often as the left, that floating kidney is much more common in women than in men, and that, amongst women, by far the larger number of the subjects of floating kidney have been women who have borne children. These points are well established, and their clinical bearings are very important.

When we palpate the abdomen of a person presenting a floating kidney, the patient lying in a recumbent position, with the abdominal walls relaxed, we can feel a

swelling, which is rounded, smooth, of the size and shape of a kidney, and which we can move in various directions, the movement being free and peculiarly slippery in its character. All the borders of the tumour can usually be easily defined by the fingers: the inner concave edge of the swelling, however, is often somewhat obscured. The displaced organ usually occupies a diagonal position, from above downwards, lying just below the free costal border, midway between the umbilicus and the last rib. The swelling can be readily moved in various directions; but it is most movable in a direction forwards, downwards, and towards the middle line; and next most movable in an opposite direction, namely, upwards, outwards, and backwards. The position of the tumour is affected by the position of the patient, the swelling descending when the upright posture is assumed, and falling towards the right or the left, according to the inclination of the body.

The respiratory movements, too, influence the position of a floating kidney. When the patient is lying down a deep inspiration may be necessary to bring the tumour forwards, so that we can feel it. Sometimes pressure on the renal region behind will suffice to bring a floating kidney forwards; sometimes pressure alone, and a deep inspiration alone, alike fail to do this, and both together are needed to bring the organ into prominence in front. The displaced kidney can generally be restored with the fingers to its normal position, but it usually falls forward again when pressure is removed. Cases in which both kidneys "float" are comparatively infrequent. In hospital and private practice during twenty-five years, I have met with only two patients who had both their kidneys floating freely. In one of these cases I could easily bring the two organs forward at the same time, and maintain their concave margins in contact in the middle line of the abdomen.

An opportunity of verifying or of correcting, post-mortem, a diagnosis of floating kidney occurs very rarely. The following is the only instance in which such an occasion has happened in my own experience :—

Early in the year 1870 I examined Mrs. Mary Ann H., aged 35 years ; I saw her in consultation with my friend the late Dr. Hickinbotham, of Nechells. The patient was a spare woman, rather anæmic, and of nervous temperament. She had had seven children ; her labours had been tedious, but natural. For six years she had suffered pain in passing her urine, with a constant desire to micturate. The urine was turbid, containing pus and phosphates ; it sometimes contained a little blood. Sometimes the pain was very severe, and then she frequently passed some shreds of membrane in her urine, and occasionally this appeared in rolls as thick as a straw. After the passage of these substances she was usually better for several weeks. A sound

introduced into the bladder indicated excessive tenderness at one spot. A tumour, having all the characters of a floating kidney, was found in the abdomen, midway between the umbilicus and the anterior superior spine of the right ilium; this could be freely moved upwards, it could be easily grasped, and handling produced neither sickness nor pain. I regarded the pus as renal in its origin, and I suggested the existence of a calculus, with consequent pyelitis, in the floating kidney.* This woman died a few weeks afterwards, and Dr. Hickinbotham exhibited the right kidney at a meeting of the Pathological and Clinical Section of the Birmingham Branch of the British Medical Association, held November 25th, 1870. The following account of the case is taken from the *British Medical Journal*, December 24th, 1870:—

"Dr. Hickinbotham showed a specimen of

* I was indebted to Dr. Hickinbotham for the history of the case.

abscess occurring in a movable kidney. The woman from whose body the specimen was taken had repeatedly suffered from great pain in the region of the bladder, with difficult and painful micturition ; the urine being loaded with pus. She had never had any pain in the kidney itself until about fourteen days before death, when acute inflammatory symptoms came on, and, in spite of treatment, she sank and died on the 17th of September. The post-mortem examination showed general inflammation of the whole peritoneum ; and the right kidney, which lay midway between the umbilicus and the anterior superior spine of the ilium was completely riddled by abscesses. The ureter was dilated and thickened. The bladder, except near the opening of the right ureter, was healthy."

The production of a floating condition of the kidney is an effect which is the result, doubtless, of the concurrence of several causes. Oppolzer thought that the affection is usually

congenital, and this view seems to have been suggested by the lengthened condition of the renal vessels which has been usually found in these cases after death ; this opinion, so far as my own reading extends, does not appear to have been fully shared by other writers on the subject. If the abnormality were congenital, it would be difficult to account for the disproportionate frequency of its occurrence in females. Cruveilhier thought the practice of tight-lacing mainly contributes to the production of this affection.

In the paper by Sir William Roberts which I have before alluded to, child-bearing and tight-lacing are given as the most probable predisposing causes of the affection. "Becquet has proposed a somewhat novel theory for the production of movable kidneys in women. In the cases encountered by him, there was a striking coincidence of time between the displacement of the kidney and the menstrual period ; and he was led to believe

that the kidney became congested and tumefied at these periods, and that displacement was the consequence of its increased volume and weight."* More or less rapid emaciation, occurring in persons who have previously been corpulent, has been considered, and with reason, to favour or of itself produce displacement of the kidney, by removing the fatty cushion which normally invests and supports the organ, and helps to retain it in position. Such a mode of causation probably existed in the case published by Mr. Adams.

There is abundant evidence to show that a blow or a violent concussion of the body may be the determining causes in some cases. Dr. Fleming attributed the mobility of the kidney in one of his cases to injury. Dr. Roberts quotes two cases, related by Henoch: in one the right kidney became movable after a blow on the right loin; in another, in

* Urinary and Renal Diseases, by Sir W. Roberts.

the case of a military officer, both kidneys became movable after a fall from a horse.

Many, perhaps by far the larger number, of the subjects of floating kidney are women who have borne children. All the examples which have fallen under my own notice have been observed at some period after child-bearing. To what extent a difficult and protracted labour may be concerned as a cause, I am unable to say. The powerful and prolonged contractions of the diaphragm which are incidental to such a condition would, doubtless, favour displacement of the kidney. I think, however, the circumstances which determine a liability to this affection arise rather as a result of the sudden removal of the pressure which the distended uterus exercises on the kidneys, in common with other organs within the abdomen. The tendency to falling forwards of the viscera, as a result of the impaired support afforded to them by the abdominal walls, in a woman who has borne children, appears

likely to contribute also to the production of floating kidney. Feeble women, with lax and atonic tissues, are probably more subject to this abnormality than those who are more robust.

The cause of the disproportionate frequency of a floating condition of the right kidney, as compared with the left, is to be found, doubtless, in the difference between the anatomical relations of the organs on the two sides of the body. Cruveilhier, as quoted by Roberts, observed :—"If the left kidney is not so frequently displaced as the right, that is owing to the fact that the left hypochondrium, occupied by the spleen and the great end of the stomach, bears the pressure of the stays with much more impunity than the right." We must remember, also, that the kidneys are moved a little by the respiratory movements. "The right kidney," writes Sir William Jenner, in the admirable lectures which I have already quoted, "is more depressed during deep

inspiration than the left, probably from its relation to the liver."

The pressure of the liver—the pressure of its weight and the pressure of its diaphragmatic movement—contributes, unquestionably, to render the right kidney more liable to displacement than its fellow. The renal vessels, too, are usually a little longer on the right side—the artery especially—than those on the left; and we may observe that the ascending colon is not so closely applied to the right kidney, as the descending portion of the large intestine is to the left. The chief support of the spleen, the costo-colic ligament (the band of folded peritoneum which passes from the left angle of the transverse colon to the abdominal wall, opposite the last rib), helps in some small degree, perhaps, to increase the fixity of the left kidney.

Healthy floating kidneys bear manipulation exceedingly well. Some authors allude to the production of a sickening sensation when the

tumour is squeezed. I cannot say that I have observed this; but firm pressure, undoubtedly, causes pain.

The patients usually experience a feeling of dragging, uneasiness, and of weight in the abdomen, which they refer to the tumour, and which may be increased by standing for some time, or by exercise, or which may never be felt except under such circumstances. Sometimes movements of the displaced organ are perceived by the patient, and then they may give rise to delusions, which we find great difficulty in dispelling. In one of the cases I have given, the patient persisted, in spite of all we could say to the contrary, in believing the movements to be those of a "child." Sir W. Roberts quotes a similar case.

Unless a displaced kidney be the seat of structural disease, preternatural mobility of the organ is not attended by urinary abnormalities. In uncomplicated cases the secretion of urine is always healthy, neither is there any inter-

ference with micturition. The irritating condition of the urine was quite a sufficient cause for the frequent desire to empty the bladder noticed in Dr. Hickinbotham's case.

The dragging and uneasy sensations I have described may be removed or relieved. Sometimes they are completely removed by wearing a tolerably tight, elastic, abdominal bandage. Anæmia, or dyspepsia, or disorders of the uterus, must not be overlooked, and suitable means must be adopted for their removal. Treatment of a tonic nature may be pursued with great advantage. When the abdominal walls are weak and relaxed, shower or douche baths, rest, and chalybeates are indicated. All constriction of the lower part of the thorax, by stays or waistbands, or the like, must be avoided, and petticoats should be suspended from the shoulders rather than from the waist. The action of the bowels must be carefully regulated; constipation, and the consequent straining, invariably aggravate

renal displacements. Violent exercise, such as riding on horseback or dancing, should be prohibited. Rest and good food do much for our poorer patients.

Floating kidney, of itself, can never shorten life ; it usually persists for an indefinite period. It is necessary, that we should clearly understand this curious abnormality, and be able to form a correct diagnosis of it, that we may remove all alarm from the mind of the patient, and prevent the adoption of injurious measures of treatment.

VIII.

THE TREATMENT OF GASTRALGIA.*

Pain of gastralgia.—Importance of negative diagnosis.—Romberg's description of seizure. Temperamental and sexual associations.—Diagnosis. — Cautions. — Employment of arsenic.—Counter-irritation.—Diet.

I DO not propose to-day to attempt a complete exposition of the nature and cure of gastralgia. I desire to draw your attention to some salient features of practical import in the definition, etiology, symptomatology, and diagnosis of the disorder, and especially to point out to you a means of treatment in which I have found confidence, based upon a long

* A clinical lecture : published in *The Lancet*, August 13th, 1887.

and frequent experience of satisfactory results.

Gastralgia is a very painful affection. The pain has marked characteristics as to position, duration, and onset, and as to its sexual, constitutional, and temperamental associations. The disorder has been variously called gastralgia, cardialgia, and gastrodynia. The nomenclature of the Royal College of Physicians authorises the last name, and it gives "stomach-ache" as a popular synonym. The malady is usually held to be a neurosis, affecting the gastric nerves. According to Dr. Leube, gastralgia is limited essentially to the sensitive sphere of the gastric nerves.* That the disorder is a neurosis is not quite proven—indeed, it is scarcely demonstrable. But the idea is a good "working hypothesis," which I commend to you. Romberg distinguished two forms of gastralgia: one, which he called gastrodynia neuralgica, he held to be a hyperæsthesia of

* Von Ziemssen's Cyclopædia.

the gastric branches of the pneumogastric nerves; the other, which he called neuralgia cœliaca, he regarded as a hyperæsthesia of the solar plexus. Although Romberg has indicated what he thought to be the signs and conditions upon which a clinical differentiation of these varieties of gastralgia might be established, I agree with Niemeyer that in a given case it cannot be determined by any methods of clinical investigation whether the patient's pains occur in pneumogastric or in sympathetic distribution. As Henoch has taught, although the distinction may rest upon a correct theoretical and anatomical basis, it is one which is inapplicable and worthless in practice.* It has been objected that the term gastralgia is unscientific, because it is only the name of a symptom. In practice, however, and especially in private practice, we meet with many cases for which I know of no other name; and I apply the name to a

* Niemeyer: Text-book of Practical Medicine.

clearly conceived and clearly defined condition. I call a case one of gastralgia in which pain, deep-seated and paroxysmal, in or about the stomach, of a neuralgic or quasi-neuralgic character, is the leading symptom. But this statement is inseparable from the following important qualification. Pain of the character and position described can only be regarded as that of gastralgia when it is unaccompanied by marked evidences of gastric or gastro-hepatic catarrh, and when, also, it is wholly unaccompanied by physical signs of structural disease either in the stomach or in its neighbourhood. The latter part of this definition involves an essential and a negative conclusion. A negative conclusion, of course, in any case is proverbially difficult. Such a conclusion should only be formed in a supposed case of gastralgia after a complete examination of all the circumstances. Further, a diagnosis of gastralgia should only be held in the conduct of a case of pain in the gastric region as a conclusion

which is subject to frequent diagnostic revision; that is, such a diagnosis can only be continued when repeated physical exploration fails to reveal any other "coarser" interpretation of the patient's suffering. I desire to impress this last statement upon you as an important clinical caution, which you must especially remember when your patient is a man at or beyond middle life. In such a person the danger of mistaking a graver and more material condition for gastralgia is especially imminent. The diagnosis of gastralgia is one which should never be lightly made, nor negligently maintained. Pain in the gastric region, you should always remember, may long appear to be simply gastralgic—that is, independent of any local organic basis—when the appearance of a tumour, or the discovery of an aneurismal pulsation, or a sudden gastric or intestinal hæmorrhage may prove a diagnosis so comparatively favourable to be tenable no longer.

Romberg's short and vivid description of

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an attack of the severest gastralgia has been accepted as classical. Let me read it to you. He wrote:—"A violent contracting pain at the pit of the stomach supervenes suddenly, or after being preceded by a sense of oppression; it generally extends to the back, there is a sense of fainting, the face is fallen in, the hands and feet cold, and the pulse small, cramped, and intermittent. The pain attains such a pitch as to cause the patient to scream out. The region of the stomach is either swelled and distended like a ball, or, as is more frequently the case, it is drawn in, and the abdominal parietes are tense. It is common to find pulsation at the epigastrium. Pressure is not only well borne, but the patient frequently forces the pit of the stomach against some firm object, or compresses it with his hands. Sympathetic sensations occur in many instances in the thorax, under the sternum, or in the pharyngeal branches of the vagus nerve, while they are seldom met with in the super-

ficial parts."* This is Romberg's account of a typical and violent seizure of that form of gastralgia which he called cœliac neuralgia or paroxysmal hyperæsthesia of the solar plexus. You may accept his clinical portrait as accurate, although it is doubtful whether he was correct in localising the pain solely in nerves of the sympathetic system. Under the heading of gastrodynia neuralgica you will find in Romberg's excellent book a faithful clinical description of the milder cases of gastralgia, or "attacks of painful sensations in the stomach," especially as they are manifested in association with the nervous temperament, and with the reflex expressions of sexual irregularities in women. I have ventured from my reading and clinical experience to form the opinion that Romberg did not describe two distinct diseases under the several names of cœliac neuralgia and neuralgic gastrodynia,

* Romberg's "Nervous Diseases of Man." Translated for the Sydenham Society by Sir Edward Sieveking, M.D., etc.

but merely one and the same affection, which I have been accustomed to call gastralgia, as he met with it in different degrees of severity. Of course a dual interpretation of painful neuralgic affections in the gastric region has an anatomical basis in the dual nerve supply of the stomach—namely, in the innervation of the organ by nerves of the sympathetic system, and also by the vagus. But, truly, in the words of Leube, "in the present state of uncertainty with regard to the mode of action of the gastric nerves, especially with regard to the conditions of sensation, and in view of the anastomotic connections between the vagus and the sympathetic in the stomach, such a division of cardialgia appears to be both theoretically and practically untenable."

Gastralgia may occur at any age. It is rare at the extremes of life. It is rarer in children than in old people. It is most commonly met with in early middle life. Like all neuralgias, it follows hereditary constitu-

tion, and is especially associated with the nervous temperament. I advise you to study temperaments. In them you will find many clues to morbid tendencies. Temperaments denote distinct types of physical form, of habits, and of capacities. A man of nervous temperament is mostly slightly built, and he is generally in a hurry. He is hypersensitive to all influences, and to pain amongst them. All his movements are quick, and he has a strong tendency to "fidget" with his ideas or with his extremities. His speech betrays him: he talks volubly, abruptly, and earnestly, often splitting up his phrases, or recalling and correcting them, and especially modifying qualifying words.*

As in all neuralgias, women are more liable to gastralgia than men. As, also, in all neuralgias, the manifestation of gastralgia is favoured by every condition which reduces

* I have given a fuller account of the nervous temperament in the essay on "Insomnia," in this book.

the vigour of a patient's "general health." Asthenia sharpens neuralgic pain, and favours its development and persistence. Gastralgia is a frequent neuralgic development of hysteria ; and, in women who are not hysterical, its incidence is often determined by the prostration of anæmia or by the exhaustion which arises from prolonged uterine discharges. In men gastralgia may be a consequence of sexual excesses or of masturbation. All these circumstances must be remembered and dealt with in the causal diagnosis and effective treatment of the disorder.

The diagnosis of gastralgia is usually not difficult. Pain is the leading symptom. When we are satisfied as to the genuineness of pain in the region of the stomach, its correct interpretation largely depends upon an accurate appreciation of various diagnostic data, *per viam exclusionis*. I cannot deal exhaustively with this part of the subject to-day. I desire, however, to give you these three cautions, which

I have learned in practice:—(1) Gastralgia is not a wasting disease. (2) It is not safe to diagnose cancer of the stomach until you can *feel* the cancer. (3) Do not diagnose ulcer of the stomach until you have *seen* blood from the stomach, either in hæmatemesis or melæna. You may take it as a clinical truth, as the late Dr. Wilson Fox clearly insisted, that pain arising in the stomach when the organ is empty, and relieved by the ingestion of food, is almost diagnostic of its nervous origin and nature.* Sometimes the pain of ulcer or cancer of the stomach may for a time appear to be relieved by taking food, but such a condition is highly exceptional. There is sometimes a kind of gastric "sinking," even amounting to craving for food, in gastric catarrh, and with greater rarity probably in gastric ulcer; the local discomfort is not, however, relieved by feeding, but, on the contrary, usually made worse. There is another diagnostic sign of great im-

* Reynolds' System of Medicine.

portance in the recognition of gastralgia. It is this: firm pressure over the region of the stomach relieves the local pain. Some patients find this out for themselves, and press a closed hand or the upper rail of a chair strongly against the epigastrium, and so find relief.

My chief object in drawing your attention to the subject of gastralgia is to explain to you a plan of treatment which I have found very successful. I can tell you of a drug which cures gastralgia. Before you prescribe it, however, you ought to find out if there be any prominent pathological concomitants or causal antecedents of the disorder, and to deal with them. Anæmia, sexual excess, overwork, work under wrong conditions, uterine discharges, masturbation,—all must be appropriately met. But for the cure of the gastralgia something more is usually necessary. Of all the directly therapeutic results in medicine with which I am acquainted, one of the most demonstrable is that which can be produced by the suitable

exhibition of arsenious acid in uncomplicated gastralgia. I give one-twenty-fourth of a grain of arsenious acid, made into a pill with two grains of extract of gentian, thrice daily, between meals. The use of this remedy must be continued for a few weeks. In a case of moderate severity no other medicinal treatment is necessary. The gastralgic pains become less frequent and less severe, and recovery is steadily and surely attained. In severer cases I use some form of counter-irritation to the epigastrium, and I usually employ a rubefacient liniment of ammonia, or of ammonia and capsicum. In the severest cases vesication by a fly-blister is of service, and the blistered surface should be kept raw for some days by means of a daily dressing of savin ointment. In severe cases a seton in the skin of the epigastrium may be employed, and it is an excellent chronic counter-irritant. But you must not rely upon treatment by drugs alone. Every hygienic adjuvant which tends to raise the

strength of the patient is of high value in the cure of gastralgia, as of all neuralgias. I especially advise you to make sure the sufferer feeds well and fully. The diet should be generous. A "dyspeptic" regimen makes a case of gastralgia worse. When you are satisfied there is no, or but slight, gastric catarrh in the gastralgia of a fairly vigorous adult, you should direct a dietary after this plan :— Breakfast : bread-and-butter or dry toast, with some fresh white fish, or some cold chicken or game, or a mutton chop, with a breakfastcupful of cocoa or weak tea or coffee. Dinner (1 P.M.) : fresh beef or mutton, with bread, potatoes, cooked green vegetables, a fruit tart or a farinaceous pudding, with a glass of light bitter ale. Tea (at 5 P.M.) : bread-and-butter or dry toast, with a small cupful of cocoa, tea, or milk-and-water. Supper (not later than 9 P.M.) : white fish, or some cold chicken or game, or a little cold meat, with bread, and a glass of ale. The

dietetic restrictions which are proper in cases of gastric catarrh, gastritis, atonic dyspepsia, dilatation of the stomach, and gastric ulcer are not suitable for cases of gastralgia. In gastralgia, indeed, such restrictions are usually very harmful. Gastralgic patients have come to me who have been getting worse and worse upon a restricted "dyspeptic" dietary; as they have become worse such restrictions have been increased improperly. In such cases I have at once given a full diet, with the happiest results. For a patient who has gastralgic pains judicious boldness in feeding is often very beneficial. Such patients are not slow to learn this for themselves. Trousseau's caution that we should never advise what a patient should eat without knowing what he does eat is shrewd and sound. Let me advise you never to assume a patient is dyspeptic because he has pains in his stomach.

IX.

ETHEREAL TINCTURE OF CAPSICUM.*

External use of capsicum. — Advantages of ethereal tincture.

I AM finding excellent results in practice by the use of some preparations of capsicum as rubefacient counter-irritants. In my hands this old remedy, red pepper, has been successful as a local application in cases of subacute gout, in chronic gout, in chronic articular rheumatism, in muscular rheumatism, and also in some cases of bronchial catarrh and chronic bronchitis. After some consideration and observation upon the subject, I

* A note published in *The Lancet*, May 17th, 1890.

decided to employ an ethereal tincture of the drug, and I asked Messrs. Southall to make a new tincture of capsicum of the strength of the alcoholic tincture of the Pharmacopœia, but made with officinal pure ether instead of with rectified spirit of wine. After some satisfactory use of this ethereal tincture in my own experience as a physician, I now venture to recommend the remedy to my brethren. I find an ethereal tincture of capsicum, by reason of the comparatively rapid evaporation of its ether, can be used more freely than an alcoholic tincture as an application to the skin. Furthermore, I think the solvent action of ether upon the sebaceous secretion of the skin makes ether a menstruum preferable to alcohol for drugs designed to affect the cutaneous surfaces, or to produce therapeutic effect through the skin. If a little ethereal tincture of capsicum be gently rubbed upon the back of a hand it will produce a feeling of warmth, with some sensation of burning and pricking,

in about a minute's time, together with an irregular and patchy hyperæmic redness, which may last some hours. If the tincture of capsicum be used as a rubefacient in the form of a liniment, an oily admixture gives frictionability, and an equal part of some bland fixed oil may be added. Solution of ammonia or oil of turpentine, or both of them, in such a liniment are good adjuvants, if a sharply rubefacient effect be desired. An excellent and powerful rubefacient liniment may be made of equal parts of ethereal tincture of capsicum, liquor ammoniæ, oleum terebinthinæ, and oleum lini. The ethereal tincture may also be applied to the skin upon spongio-piline.

X.

ETHER AS A MENSTRUUM IN MEDICATION BY THE SKIN.*

Absorption of medicines by the skin.—Faultiness of the officinal plasters.—Obstacles to absorption by the skin.—Advantages of ether as a menstruum.—Ethereal tinctures.—Belladonna.—Iodine.—Menthol.

In some researches in iamatology which I have been making for some years, it has occurred to me that the use of the skin in therapeutics, as a channel for the exhibition of remedies designed to effect either local or remote curative results, or both of them, might

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* A paper published in *The Lancet*, July, 12th, 1890.

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be extended in range, cleared in precision, and improved in efficacy. I know the question of the absorption of medicines by the skin bears many difficulties, and has excited some disputes. Authorities have been divided as to how far, if at all, the local and remote effects of remedies applied to the human body in morbid states can be produced through the cutaneous surface. No practitioner of medicine is likely to doubt, however, that the human body, in many of its organs and tissues, can be readily brought under the direct and distant influences of hydrargyrum by the cutaneous inunction of mercurial ointment. It is easy to question the efficacy of remedies exhibited by the skin when the effects which they produce are less objective in their demonstration than those of mercury. We may recall that the capacity of the skin to absorb medicinal substances from their aqueous solution in baths was accepted in the medicine of the ancients, whose therapeutic uses of medicated

baths we are now learning, *longo intervallo*, to imitate. The question has been discussed frequently since the close of the last century.* At that time Abernethy and Falkner concluded, from a series of experiments, that the absorption of some remedies through the skin did take place under certain conditions; and, while some other observers were led to qualify or to contradict these inductions, affirmative conclusions upon the subject were fully supported by Braconnot, Chevallier and Petit, and other investigators. Some striking instances of efficient percutaneous medication are well known to us. For example, ointment of aconitia rubbed upon the skin of the face produces anæsthesia of the subjacent sensory nerves, "so that a razor passed over the part in the act of shaving is not felt."† We are accustomed in medical practice to present

* See Dr. Scoresby-Jackson's Note Book of Materia Medica, etc., fourth edition.

† Farre's Pereira's Materia Medica and Therapeutics.

remedies to the skin with the view of producing remote as well as local effects, in the various forms of the officinal emplastra, of the officinal liniments (alcoholic, oleaginous, and saponaceous), and of fatty unguents. Of these separate forms of medicaments in enepidermic use, the ointments and the oily liniments are probably the most active, because of their easy admixture with the fatty sebaceous secretion of the skin. I do not think the structure of any Pharmacopœial plaster is such as is likely to permit of the absorption of its active ingredients. There are fourteen plasters in the British Pharmacopœia. A "true plaster" is held to have for its basis litharge in union with oleic, margaric, and stearic acids, and eleven officinal plasters are so composed. The other plasters, which are not strictly plasters, take their body from the chemical action of their ingredients, as in emplastrum ammoniaci cum hydrargyro, or from wax, lard, pitch, frankincense, suet,

resin, soap, and some fixed oils, in various combinations. Neither a plaster so formed nor a solution in alcohol of the active principles of drugs is a scientific medicament for enepidermic employment and percutaneous action, if we have regard to the structure and physiology of the human skin.

I think it will be found there are in practice three separate obstacles to the absorption of a medicine through the skin—namely, the epidermis, the sebaceous secretion of the skin, and the relative insolubility of the drug which is employed in any particular case. After some observation and consideration I thought ether would be the best menstruum at our disposal for the solution of many remedies designed for enepidermic application; and I concluded that ethereal liniments would be more active through the skin, and certainly stand upon a better scientific basis, than plasters, than any of the officinal liniments, or even than fatty unguents. Ether presents several advantages over other

bases and menstrua for remedies applied to the skin. It has great endosmotic capacity; it probably possesses in a high degree what has been called "diffusion power;" it is a solvent of high potency for many active drugs, or, more precisely, for the active principles of many such drugs; and it also is a ready solvent of the fatty constituents of the sebaceous secretion of the skin. When we use ether as a dissolvent for an active drug which we apply to the skin, we apply our remedy in solution in a menstruum which is a perfect solvent for the obstructing fatty sebaceous secretion of the cutaneous surface; we employ a menstruum which, by its solution of the fatty secretion, permits the most intimate application of the remedy to the bare epidermal surface. In *The Lancet* of May 17th of the present year I published a brief account of an ethereal tincture of capsicum, which I have been using largely in practice, and which I have found to be a very active rubefacient and an efficient remedy

in several painful maladies. I now venture to recommend to my brethren the employment of ether as a solvent vehicle for some other remedies which may be applied to the skin. After examining a large number of drugs I have selected belladonna, iodine, and menthol, besides capsicum, as suitable for external therapeutic employment in the form of ethereal tinctures. Ethereal tinctures of these well-known drugs have been made according to my directions, and it has been easy to find for these preparations some considerable application in the exigencies of daily practice. After using these ethereal tinctures with satisfactory results, I have searched my library for references to this employment of ether, and I am glad to find the following important passage bearing upon the subject in Dr. Lauder Brunton's text-book of therapeutics: "It would appear that the fat in the skin as well as the epidermis presents an obstacle to the absorption of substances in

solution, but when they are applied in such a form that they can readily mix with the sebaceous matter of the skin, they are tolerably readily absorbed, as, for example, when they are used in the form of ointment. . . . . They are also absorbed when dissolved in ether, and especially in chloroform, even when simply painted over the surface. Alcoholic solutions are not absorbed when painted in this way." This statement, by an authority in therapeutics so high, that medicinal substances soluble in ether are absorbed through the living human skin when the ethereal solutions are "simply painted over" the dermal surface, appears to be an observation very pregnant with remedial possibilities. It is not a little surprising that we should have overlooked so promising a development of our curative resources so completely and so long. The disadvantages of chloroform as a menstruum of this kind are numerous and obvious ; but ether is an excellent medium,

either as a simple solvent or as a menstruum, for the preparation of a tincture from a crude vegetable drug. Ethereal tincture of belladonna (tinctura belladonnæ ætherea) I propose should be made from belladonna root, with camphor, of the same strength as the belladonna liniment of the Pharmacopœia, using the officinal pure ether in its preparation instead of rectified spirit of wine. The result is a bright tincture of a brilliant "apple green" colour. I think this tincture will be found useful as a paint for the skin in cardiac and other cases in which belladonna plasters or liniments would otherwise be employed. The external application of preparations of belladonna over the heart, to calm tumultuous, irregular, and excessive beating of that organ, has long been accepted in our practice. The preparation usually employed is the officinal plaster ; if its good effects depend upon the absorption by the skin of the active principles of the extract of belladonna contained in the

plaster, such a result is likely to be attained with more potency and precision by the local use of an ethereal tincture. I have used belladonna root instead of belladonna leaves, because it gives a preparation which does not colour the surface of the skin as one made from the leaves does. In cardiac cases emplastrum belladonnæ is a clumsy and inconvenient application. It is dirty, uncomfortable, not seldom irritating, and it always offers some obstacle to the examination of the heart by physical methods. Ethereal tincture of iodine I have had made of the same strength as the officinal tincture of iodine. To form an ethereal tincture of menthol I have, after many experiments, fixed upon a solution of menthol in pure ether, of the strength of one drachm of menthol in a fluid ounce of the solution. This preparation can be readily applied as a paint to the skin, and it is an efficient means of using menthol for its local therapeutic effects, especially for the removal of superficial neuralgic

pains. It should be lightly painted over the painful part. The quick evaporation of the ether gives a grateful sense of coldness which supplements the analgesic action of the menthol, and allows the easy application of a succession of coats, which leave pure menthol in a finely divided condition upon the skin. For the application of ethereal tincture of menthol I have found it best to use a brush of glass. When the meshes of the brush become clogged with menthol by the evaporation of the ether of the preparation, they can be freed in a moment by dipping the brush into the tincture.*

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* Messrs. Southall have given me much assistance in the experiments and enquiries upon which this paper is founded.

XI.

RANDIA DUMETORUM.*

Action of saponin.—Indian uses of randia.—Employment as a nervine restorative and antispasmodic.

In Messrs. Southall's exhibit at the meeting of the British Medical Association in Birmingham last summer, there were some interesting Indian drugs, comparatively or quite unused or unknown in England, which had been collected by Mr. David Hooper, the eminent Oriental pharmacologist, who has been for some time engaged in India in the office of quinologist to the Madras Government. I examined

* A paper published in *The Lancet*, March 21st, 1891.

these drugs, and considered the information I could gather about them ; and one of them—namely, randia dumetorum—appeared to me to be worthy of further investigation and trial. Under my directions, Messrs. Southall prepared a series of tinctures of the drug, and one of these—a tincture made with the spirit of ether, B.P.—I have been using in practice, as a nervine calmative and antispasmodic, in cases in which the vegetable antispasmodics, such as valerian or assafœtida, appeared to be indicated. I now desire to invite my brethren to examine this drug for themselves, and to say my experience of its employment points to its proving a useful addition to our repertory of nervine antispasmodics and cardiac excitants. The fruit of randia dumetorum has an ancient repute as a popular medicine in India—being given in large doses as an emetic. The pericarp, especially when fresh, has a powerful and penetrating odour, due to valerianic acid. The active principle of the drug is said to be allied

to saponin, which is a glucoside found in soap bark, and also contained in senega and sarsaparilla. We may remember that saponin has been shown to possess some very marked physiological potencies, of a kind which point to valuable and numerous therapeutic applications. For example, Dr. Lauder Brunton describes saponin in various places in his well-known text-book of therapeutics as a respiratory excitant and depressant; as a sternutatory; as a stimulating expectorant; as a depressant of the cardiac inhibitory ganglia and of the vagus ends in the heart; and as a cardiac antagonist of digitalin. In the official pharmacopœia of India, in the edition of 1868, prepared under the direction of Dr. Waring, of the India Office, I find randia dumetorum described as a non-officinal drug. Randia appears to be a shrub common in most parts of India, growing, as its second name states, in thickets. The fruit is held in high esteem by the natives on account of its emetic

properties. The following note upon its use was communicated to Dr. Waring's pharmacopœial committee by Dr. George Bidie :—

"The fruit is about the size of a crab-apple, round, two-celled, many-seeded, and crowned with the rim of the calyx. It has a peculiar sweetish sickly smell, which increases after the fruit has been kept for a few days. It is very commonly used as an emetic by the poorer classes in Mysore, and is said to be safe and speedy in its action. I have myself seen it used several times, when it produced emesis in about fifteen minutes. The dose is one ripe fruit, well bruised, which may be repeated if necessary. It is apparently an irritant emetic."

Dr. Waring also adds—

"According to Ainslie, an infusion of the bark of the root is used by the natives to nauseate in bowel complaints. Roxburgh mentions that the bruised fruit thrown into the water intoxicates and even kills fish, which,

however, are not considered less wholesome in consequence."

I have had four tinctures of randia made —namely, with spirit of ether, rectified spirit of wine, aromatic spirit of ammonia, and proof spirit, respectively, and of the strength of one part of the drug in five parts of the tincture. When any one of these tinctures is diluted with water and acidulated with acetic acid, the odour of valerian is very apparent; and it is most apparent in the tincture made with spirit of ether, and this is the tincture I have selected for therapeutic use. The dose of tinctura randiæ dumetorum ætherealis is from fifteen to sixty minims. It is given diluted with water, and the two fluids make a milky-looking mixture. The tincture has a strong and characteristic odour and taste, and is of a bright maize colour. It may be given with iron, if a greenish colouration be permissible.

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